# SCHOOL AND COLLEGE PLACEMENT

**Journal of the Pennsylvania Association of School and College Placement**

CLARENCE E. CLEWELL
*Editor*

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# A SALES CAREER WITH PROCTER AND GAMBLE

J. M. ELLIOTT

*Personnel Research Department*
*Procter and Gamble Company*

*AS part of our policy of featuring aspects of training with some of the nation's leading industries, Mr. Elliott was asked to prepare an account of Sales Training in the Procter and Gamble Company. The accompanying article, written as if by a participant in this program, is his reply.*

*EDITOR.*

WHILE I was still a student I learned of Procter & Gamble's policies, through a course in personnel administration, and I made a mental note to investigate opportunities with the Company when the time came for securing a business connection. Accordingly, I wrote to the Cincinnati office for information, including organization charts and descriptions of the various departments. The college placement officer gave me further information.

Shortly after, upon recommendation of the placement officer, I secured an interview with one of the Procter & Gamble representatives on the campus and obtained a considerable amount of information in addition to that contained in their printed booklet. I learned that the organization has twenty-eight sales offices or "districts," each under a district sales manager who is responsible to the management not only for several millions of dollars of business annually, but also for selecting and developing his share of men to take care of future managerial needs. A well-thought-out plan of providing for future management needs is in effect in the sales department, and the young men in training are watched closely through reports, personal contacts, periodic personnel inventories, and in other ways by the sales executives. So I found I could receive just as careful consideration through their offices in other cities as I could if I were to go to their headquarters in Cincinnati.

Another point which vitally interested me was how far ahead the Company schedules the training and development of a man whom they consider to have outstanding potentialities. They look ten years or more ahead and think of a man as reaching at least the district manager level eventually. I learned, too, that this does not necessarily mean every college graduate employed has reached this high sales executive level. However, since every position above the level of salesman held permanently by a man is blocked for others, the Company plans very carefully so that jobs at different levels are open as frequently as possible for training grounds. This can be accomplished only by filling them with men who will go far over a period of time.

Another reason for aiming high in their selection of young men for these positions is that in spite of their painstaking methods of selection it is extremely difficult to forecast with high accuracy, at the time a man is in his early 20's, how far he will go eventually. It is found relatively easy to fill the jobs half way up the ladder, but very difficult to select men who go to the top.

### Selection

How, then, did Procter & Gamble measure my qualifications? First came the interview. In the first of these, I learned later, careful consideration was given to such factors as general appearance, drive, self-assurance, friendliness, and warmth of personality. The Company wants men who are leaders of their own age groups. Men are questioned closely on how well they invested their years in college. The Company is not deeply concerned with what courses were taken or what grades were received in particular courses; they want to

know whether the applicant was a good student in general, because good grades are indicative of good work habits as well as of ability. I was asked if I had achieved recognition as a leader on the campus, for experience shows that campus leaders are more likely to achieve leadership status in their sales organization.

I took several aptitude tests which measure mental alertness, ability to handle successfully the sales job, and managerial potentialities. These tests are based on men already with the Company who have demonstrated varying degrees of sales and management ability, the underlying idea being to compare the applicant's interests, viewpoints, attitudes, reactions, etc., with those of successful Company salesmen and sales managers. If the applicant's answers agree closely with the answers of the more successful men in managerial positions—that is, if he makes a high score on their test for management aptitude—the chances are much greater than otherwise of his successfully adjusting to sales management responsibilities. The representative explained that the final decision as to whether I would be offered a job would be based on my successfully meeting the standards on these tests, and on the agreement of several experienced sales executives, after interviewing me, that my chances of success in the sales department were definitely good.

The representative stressed the importance of my securing an adequate amount of information on which to base my decision. It is just as important that I be convinced of the desirability of a sales career with Procter & Gamble as that they be "sold" on my potential value to them. Thus, they regard the employment procedure as an exploratory undertaking rather than an opportunity to persuade a man that he should select Procter & Gamble for his sales career.

After reading the Company's printed material, weighing the information obtained during the course of several interviews, and securing opinions from several of my personal acquaintances in whose judgment I had confidence, I indicated my desire to be considered and received an offer of employment, which I accepted.

By this time I was enthusiastic over opportunities with the Company and curious to know what my beginning assignment and initial experiences would be. I was acquainted, of course, with the general plan of training, such as the two principles; (1) training is a continual process throughout a man's service with the Company, and (2) training is done almost entirely on the job.

### Advertising Crew

My first assignment was to an advertising crew, which at the time I reported for duty was operating in a town within the boundaries of the sales district in which I had been employed. I reported to the crew manager and found that the group of eight young men was systematically covering all areas in the town, handing coupons to the housewives and giving each one a prepared talk urging her to redeem the coupons. I realized later that during the several months I spent as a distributor I had learned more than most grocers learn in a lifetime about soap and the housewife's ideas as to the relative merits of various soap products. Incidentally, I found that in the process of crew work I had also learned a great deal about human nature that would be useful in my future work.

My next assignment on the crew was the job of storeman. In this capacity I called on all the grocers in the neighborhood in which the crew was working, to make sure they had a sufficient supply of our products to redeem all the coupons which would pour in from the housewives. This gave me experience in making displays and my first taste of selling, as I carried small supplies in my car to take care of the grocer's immediate needs. This store work also afforded me the first opportunity to study grocers and to see how they

operate, thus breaking the ice for my later assignment as section salesman.

From storeman I went on to the job of crew manager for two months, and got my first chance to handle men. I had thus spent six to eight months in field advertising work before I started selling.

I then found myself a full-fledged Procter & Gamble section salesman, and my sales training began in earnest. I was assigned to what is called a "section"—a territory with a population of about 200,000. I made my headquarters in a medium sized town and found that my section included several nearby towns which could be reached easily in several hours in the car with which I was supplied. I was transferred from a weekly to a monthly salary basis and became eligible for added compensation up to a maximum of three months' salary. This extra compensation, I learned, was based not only on my personal efforts in exceeding an annual quota for my section, but also on the success of seven other men in my "unit," all reporting to the sales supervisor who was my immediate superior. Expenses incurred in the course of my work—such as car upkeep and traveling expenses—were paid by the Company. I handled all of the Company's business to the retail grocery trade in my section; no other Procter & Gamble men called on the same trade.

My training here began with my supervisor spending Saturday morning with me, acquainting me with the Company's activities in my section; the sales tools and general method of operation of a salesman; Company brands, prices and advertising programs; and other details of the job. Then I was ready to start my field training in my newly acquired section.

### Field Training

The first week in the field I spent with the district instructor. For several days I observed his selling and asked questions. Then, as I got the "feel" of it, I took a couple of calls and experienced the thrill that comes with a man's first sale. By the end of the week I felt confident enough to carry on by myself. Among my first impressions as a salesman were the thoroughness of the training program and the close personal contacts with my superiors. In the sales department there is one man engaged in some form of management or training work for every five salesmen—a much higher ratio than for most sales organizations.

After I had worked alone for a week, my supervisor worked with me for several days to see whether I was functioning smoothly on the points covered in my first week of training. After this he spent a day or more with me every two weeks during my first several months of service.

As time went on, the sales aids I received, including material sent me regularly for my sales organizer folder to stimulate buying, were of great help in my work. The salesman's manual, containing up-to-the-minute information on the salesman's job, in itself gave me a background of confidence and knowledge which contributed materially to my personal development and to the sales results secured in my section.

During my sixth week in the field, the office head salesman spent three days with me, to fix more firmly correct work habits and to increase the effectiveness of my selling technique. In addition to reviewing the fundamental parts of my job (planning, basic store procedure, and detail work), he gave special attention to stimulating resale, appealing to buying motives, and building goodwill.

My supervisor, when working with me several weeks after this advanced training period by the office head salesman, devoted some time to checking my operations, to see how well I understood the instructions on the new points, and to polish still further my selling methods in general.

After about seven months of this new work, the division instructor spent three full

days with me, giving me further advanced training.

In the succeeding months several training quizzes were assigned to me. I later had the opportunity to discuss these, as well as other progress reports which highlighted certain points of my operations which deserved my special attention, thus helping further to round out my selling methods. By this time I felt that my grasp of the job of Procter & Gamble salesman was so thorough that I could, with ease, train other men. I was happy, therefore, when I was notified that I had been selected as a district instructor, and was given training in that work by the division instructor. The job of district instructor, which is concerned with breaking in new men in the district, took only a small part of my time, as turnover of men is low. My main job was still that of selling.

But this by no means completed my training. At later periods the division instructor discussed the finer points of such matters as handling large accounts, jobbers, and chain and association headquarters; working a "market"; and controlling expenses.

Having proved a successful salesman, I was sent to Cincinnati to a week's training school the purpose of which is preparing men as trainers. This school, conducted by the Personnel Research Department, was attended by seven or eight other men from as many districts, most of whom also came from sales jobs. Here we discussed the Company's sales training program generally, from the viewpoint of the trainer, and succeeded in acquiring a substantial amount of training theory and practice. While at the training school we also received preliminary training in employment methods which would be useful later on. Following the training conference I was assigned to the job of office head salesman, operating under a district manager.

As office head salesman I divided my time between the office and the field, and had my first chance to view the Company's sales operations from a district-wide viewpoint. Much of my time was spent in breaking in new salesmen, doing special training with certain men, collecting information for the district and carrying on many duties in the office concerned with a fast moving aggressive sales organization. My duties included the interviewing and testing of applicants who applied to the district office for sales jobs, and otherwise assisting the district manager and supervisors in their employment problems.

I next was transferred to the job of division instructor, which involved carrying on advanced training work in the districts of my division—usually four or five. I thus had an opportunity to compare operations in several districts. I also assumed some responsibility for the quality of training conducted by the district instructors, and found myself training trainers as well as salesmen.

After a year as division instructor I became a supervisor having personal responsibility for the success of my unit of seven salesmen; and I learned very quickly that this is an important sales managerial job, more important than the title suggests. My responsibilities included the selection of men, seeing that they were properly trained (with the assistance of instructors), and developing them into a happy, successful, highly efficient team. At this point in my progress with the Company, I found that my own success was based squarely upon the success of the men reporting to me and for whom I was responsible.

Demonstration of ability to manage men as a supervisor led to my appointment as assistant to the division manager at the executive offices in Cincinnati. After a year in this post, I was appointed a district manager.

The district manager controls the activities of several units, each under a supervisor,

(*Continued on page 68*)

# REDIRECTING AMERICANS

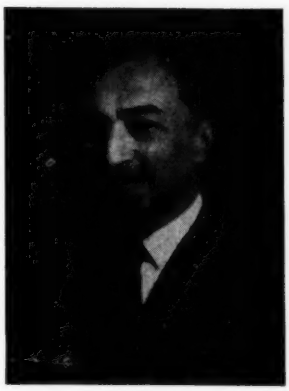
## A New Approach to Self-Reliance

JOHNSON O'CONNOR

*Director, Human Engineering Laboratory*
*Stevens Institute of Technology*

*A HIGHLY important objective of the Pennsylvania Association of School and College Placement is to promote constructive discussion of the problems connected with Occupational Adjustment. Formal tests which bear directly or indirectly upon these problems have, therefore, a vital place in the Association's program, and accordingly we propose to publish articles, from time to time, which relate in one way or another to methods by which these problems may be solved. Recently we invited Dr. Johnson O'Connor of the Human Engineering Laboratory of Stevens Institute of Technology to contribute to this discussion through the columns of* SCHOOL AND COLLEGE PLACEMENT. *In reply, Dr. O'Connor suggested the desirability of publishing his recent article which appeared in THE ATLANTIC MONTHLY for February, 1941, provided the Editors of THE ATLANTIC MONTHLY would approve the plan. This approval has now been obtained, and we have the privilege of including in this issue the following article on "Redirecting Americans" by Dr. O'Connor.*

*EDITOR*



*Dr. O'Connor*

—

AN accountant of six years' experience arrived at the Human Engineering laboratory in Hoboken, sent by his employers with the advance warning that they planned to discharge him and wished advice about where he should turn next. On meeting the administrator he remarked belligerently: "Do not talk accounting to me. I know I'm no good." Yet in laboratory tests he scored notably high in *accounting aptitude*, with a natural speed and accuracy in the manipulation of figures — an invaluable gift in twentieth-century urban life, and a prime requisite of accountants, bankers, statisticians, and among girls, of stenographers, typists, and clerks in general. Later in the same test session, he scored equally high in *structural visualization*, an inherent sense for three-dimensional forms, an instinctive ability to construct in the mind's eye from a flat blueprint a clear picture of a solid object.

This man's work was auditing, which requires the first of these characteristics, but not the second. At the Laboratory's suggestion his supervisor shifted him to a type of cost accounting where he still needed his accounting aptitude, together with his accounting knowledge and training, but where in addition he used structural visualization in picturing from a working drawing not only a new article to be manufactured but the machine tools to produce it. In time he became head of the cost-accounting department and ultimately of the organization which planned previously to discharge him.

Architects need structural visualization to foresee vividly the finished building. Physicists employ it in picturing the interactions of electrons within an atom. Cytologists use it in constructing, from a series of microscopic cross-sections, a concept of the

three-dimensional cell. Crystallographers call upon it in studying the intersections of crystal planes. Aviators probably use it in bringing a plane to the ground, certainly in blind flying.

The world views structural visualization as invaluable when applied by the eminent engineer in spanning a river with a steel bridge or in digging beneath for a vehicular tunnel, but fails to recognize the same gift when it causes the schoolboy to fail in such abstract subjects as Latin, French, even English and history, or hampers the ineffective accountant, lawyer, teacher, writer, or salesman in grasping abstract ideas. Salesmen who are effective score collectively low in this structural trait; a salesman who scores high often becomes a grumbling failure, even though endowed with every other measurable sales requirement.

Too frequently today organizations, in expressing their appreciation of a skilled toolmaker or diemaker, with a necessarily high degree of structural visualization, advance him to supervision, robbing him of all chance to exercise his structural aptitude, and so lose an excellent mechanic to gain a mediocre foreman. Not many years ago, in a cluttered wooden shack, a born mechanic started to build with his own hands a now nationally known product. He is now president of an organization which occupies two buildings, each covering a city block. Because of his position, he devotes much of his day to talking with subordinates, with colleagues, and with customers, but he spends his evenings in a beautifully equipped shop in his own home, building the preliminary model of some device which the public will later buy in finished form, or sometimes just building for fun. Neither title, success, nor money has displaced his need for using his structural visualization.

At the Human Engineering Laboratory in Boston, a factory workman scored high in every aptitude for his own job, and then equally high in *creative imagination*.

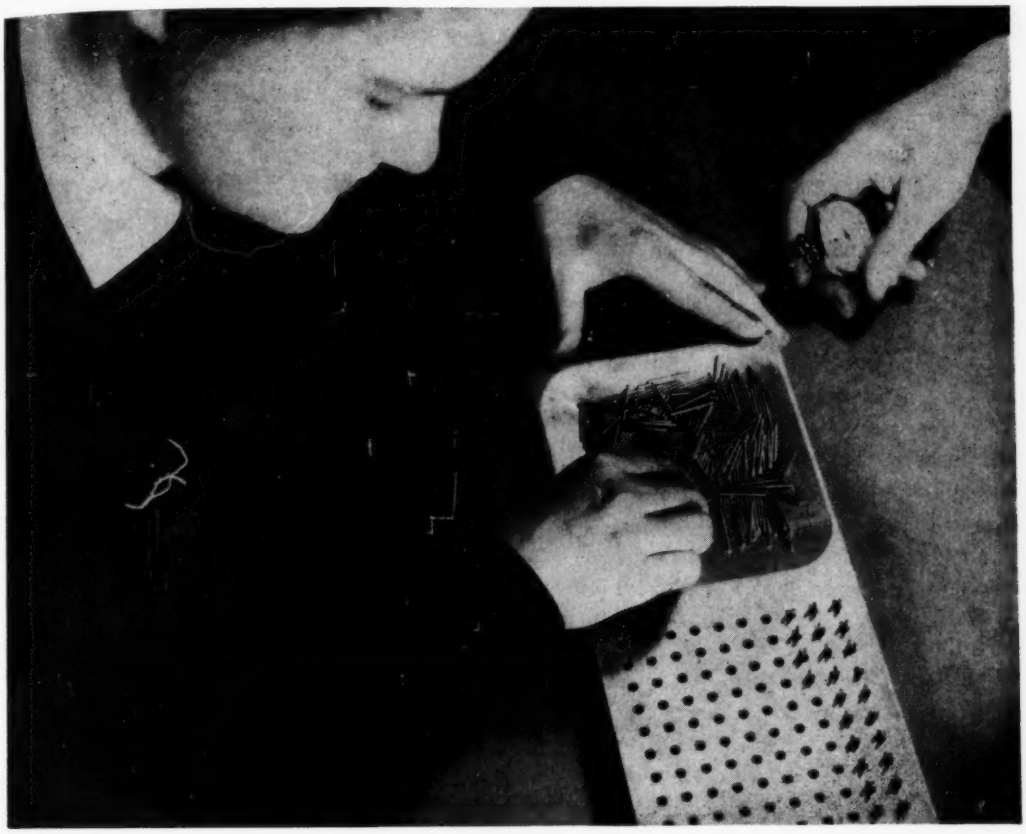
We asked: "How do you use it?"

He answered, in a matter-of-fact tone: "Organizing strikes."

The term *creative imagination* denotes a measurable aptitude which grows through childhood to the age of fourteen or fifteen and thereafter remains unaltered. Just as the world perceives a chemical, once purified and turned to some constructive use, so it recognizes creative imagination in the poet, the artist, or the musical composer, but frequently fails to recognize the same characteristic in the factory worker. The trait is no more apparent to the unaided eye than sulphur and phosphorus in steel, but nevertheless it is as real an entity, as valuable as these two chemical elements but just as harmful when misplaced. Creative imagination displays itself in many brilliant teachers, but not generally in trusted accountants; occurs frequently in the field of advertising, but not often among successful business executives. It seems to be bubbling over with untried ideas, an effervescive gift which, unless rigidly harnessed, drags one unresistingly toward every novel notion.

The strike promoter, who clearly recognized his activities as an outlet for an unused aptitude, brought to the Laboratory one at a time, a small group of companions, all rebellious organizers. Each ranked high in the aptitudes for his own job, but in others besides. While an unsympathetic public often views the resistant troublemaker as a bungling craftsman reaching for any excuse not to work, the cause is occasionally too much ability, rather than its lack. For idle aptitudes lie at the root of many industrial strikes.

Sponsored by two engineering schools, Illinois Institute of Technology in Chicago (where a third laboratory now occupies Glessner House) and Stevens Institute of Technology in Hoboken, the Human Engineering Laboratory measures, after twenty years of intensive and continuous research, thirteen aptitudes. The identifying names



*One of the worksamples administered by the Laboratory*

of these invisible elements of human capacity imply as yet little more than did originally the picturesque designations of the newly found chemical elements. One forgets that the descriptive phase "inflammable air" once designated the entity now called "hydrogen." Yet, basing their efforts upon a technical apprehension of some ninety such substances, engineers and manufacturers fabricate a multitude of nearly perfect products. The steel wires supporting a suspension bridge require for their enduring strength and safety not mere size, but a nicely controlled amount of the chemical element carbon, combined with an almost complete elimination of sulphur and phorphorus—meticulous specifications which result from a methodical and often uninspiring study of every factor. Similarly the thin thread of human happiness may depend upon some elusive ingredient, or upon the absence of another imperceptible to the eye. From the intangible elements of man's individuality which the Human Engineering Laboratory is isolating, civilization may ultimately build happiness much as the modern engineer builds any lasting structure.

Nor is this so impractical a dream as it seemed when the first article on the Laboratory appeared a decade ago in *The Atlantic* for June, 1931. That year 850 persons came individually to be tested by a staff of three. During the next five years the number who came annually increased steadily to 1500, tested by a staff of twelve. Last year a staff of 52 tested nearly 7000 persons. At first a two-hour appointment sufficed. Then, as the number of recognized aptitudes in-

creased, this lengthened to three. Now two appointments of three hours each, within a week of one another, are needed for the evaluation of the measurable traits.

How many elusive aptitudes remain as yet unfound no one knows—a total equivalent, perhaps, to the number of chemical elements. On this premise, and at an average cost paralleling that of the thirteen aptitudes now known—approximately $26,000 apiece—the discovery and isolation of the remaining eighty, if they exist, demand a research expenditure in the neighborhood of two million dollars. Because of the startling vastness of such a sum, this obvious step toward a permanent understanding of human actions will no doubt drag out over the next several generations, as did the grasping of the chemical elements, for, although scientists ultimately finished the task, virtually one hundred and fifty years elapsed between the identification of hydrogen in England in 1768 and the near completion of the periodic table.

One sees clearly in retrospect that from each fresh chemical element sprang a profitable industry, which might have financed the unearthing of new materials decades earlier. The problem was formulated, the task seen, the techniques understood; but the unbridged gap between investment and return defied the foresight of those who lived between 1768 and perhaps 1900.

Lack of money and lack of labor now block progress in the understanding of human actions, for the recognition of more aptitudes, the purification and increased understanding of those now known, await hundreds of thousands of clerical entries. The automobile manufacturer, the superintendent of every wire mill, or the executive head of any modern steel plant accepts as axiomatic the harmful effects of a bit too much sulphur and phosphorus in steel, though he sees neither. Yet he ignores the devastation wrought by some unused aptitude on his payroll. A fraction of the financial cost of labor disputes, were it invested in putting aptitudes to constructive use, would pay a substantial return in reduced friction, in greater security, in a more certain continuation of our democracy, for at present unused aptitudes occur prevalently enough to undermine universal happiness and any sense of satisfaction with modern civilization.

The United States in its rôle of employer both for the army and for civilian duties might each year place a million citizens nearer the goal of their ambitions. But governments too frequently view their soldiers as ungifted automatons. In talking with men about themselves, as does this Laboratory, the great criticism of enforced military training is the waste of time involved. "I do not want to lose a year" recurs hourly, for most men consider that war service sends them in a direction at total variance with the main current of their lives. Yet these same persons plan to devote their energies to building a better world; some expect specifically to undertake public health, medicine, low-cost housing; others, economics, airplane design, or engineering construction, activities vital to a modern army. For war is today only in part physical. Victory demands airplane pilots, ground mechanics, map makers, photographers, and is dependent for success not upon physique but on some rare combination of aptitudes. More important still, the outcome hangs on new discoveries: protection against bombers, knowledge of how to influence public opinion and particularly a comprehension of man himself.

Industries clearly gain by putting men and women more fully to work, and should establish controlled inventories of unemployed aptitudes now stagnating on their payrolls. They already conserve physical resources, list exhaustively materials on hand, use substances once called waste products, but prodigally ignore human capabilities, reaching out for new employees

as casually as not many years ago they bought quantities of raw materials which they but half consumed.

Conscientious executives frequently liken humanity to a pyramid, unendowed masses at the bottom, culminating in the rarely gifted individual at the summit. But actual statistical findings, which repel the general reader less today than in the past, show no such distribution. On the postulate of thirteen pure aptitudes, only one person among 8000, theoretically one person in 8192, lacks all thirteen—that is, scores below average, below the median, in all. Thirteen persons in the same 8000 possess one aptitude apiece, 78 persons have two each. But nearly 7500 persons in the same 8000 score above average, above the median, in between four and nine of these thirteen aptitudes.

A little more than one hundredth of one percent of humanity score below average in thirteen aptitudes. A similar insignificant percentage scores above average in all thirteen, whereas nearly a quarter of all humanity possesses six, and another quarter seven, of these aptitudes. No one directly observes an aptitude, and not more than one person in several thousand puts his own aptitudes to full constructive use, but the Laboratory now measures them in much the same manner, though not with the same accuracy, as a chemist finds a chemical element, often in the most unexpected environment.

How, then, arose the prevalent belief that American minds score low in tests? Partly from the widespread application of paper-and-pencil group examinations. Inherent aptitudes, freed from the effects of classroom background, can be measured in most cases only by performance tests presented individually, under rigidly controlled conditions,

*A worksample*

by an experienced test administrator. Few realize the skill needed to unearth dormant traits hidden by a history of school failures, of inarticulateness, of social maladjustment. The Laboratory devotes two full years to training each member of its own staff and believes accurate results impossible to gain in much less time. Yet educators and industrialists write almost daily hoping to purchase sets of tests. Apparatus alone plays only a minor role in the accurate measurement of these invisible aptitudes, and for this reason the Laboratory sells only its knowledge tests, not those which measure aptitudes.

Aptitude testing is still in its early stages. It cannot as yet be performed on a wholesale basis. Until testing techniques become more firmly established, both industrialists and educators should rely upon trained technicians for the administration of aptitude tests and should themselves concentrate on inventorying and putting to use now measurable but unused characteristics, for at the moment this aspect of the work stubbornly retards general progress.

To appreciate the Laboratory's concern over inactive aptitudes, one must differentiate them sharply from knowledge, from acquired schooling, from English vocabulary. For men are often inarticulate, uneducated, but inherently endowed with capabilities which educators underestimate. Schoolmasters imply that, as student bodies grow, standards necessarily drop, thus failing to distinguish incisively between knowledge and capacity. By lowering standards they mean lowering the goal toward which students work. Instead, educational standards in terms of ultimate accomplishments must be raised, for few persons tax to the full their innate endowment.

In a public high school, under the direction of a man who knows every member of the large student body so well that one instinctively calls him headmaster, the Laboratory measured the twenty most difficult cases, delinquents, troublemakers, outcasts scholastically. In acquired knowledge, cultural background, English vocabulary, they fell nearly off the scale at the bottom, and this lack so impressed the educational world as to obscure their array of inherent gifts, for *in aptitudes* this troublesome group averaged slightly higher than the school as a whole. They lack the words with which to impress others, but possess aptitudes which demand expression and which, if not used constructively, explode subversively.

Every college freshman class contains individuals who score no higher in the Laboratory's English vocabulary tests than does the normal eighth-grade pupil. Such students misunderstand the lectures, fail to grasp the texts, dislike the assigned reading, and many educators immediately declare them not college material. But controlled laboratory measurements suggest that they are rather without knowledge than incapable of its acquisition. In the *Johnson O'Connor English Vocabulary Builder*, the words *horseshoer*, *soak*, and *law*, words 1, 2, and 3, are correctly known to virtually every adult, and therefore necessarily within his capabilities. One familiar with these may add the words *abandon*, *intact*, and *boulevard*, numbers 56, 57, and 58, and then in turn *blunder*, *mature*, and *drudgery*, still more difficult. Trouble comes when one who barely apprehends these words attempts suddenly to learn *plethora*, *jejune*, *polity*, and *glabrous*. The clear grasp of each new fact rests upon another which just precedes it in difficulty, for all knowledge may apparently be organized in order of easy acquisition. To learn rapidly and effectively, each person, whether child or adult, must add those facts just at the border of his present knowledge, not concepts far beyond. The challenge is not to lower the goal of low-vocabulary men and women, not to shunt them into restricted, blind-alley fields, but to crystallize

their furthest ambitions, catch the dream of possible attainment, hold it ever in sight, and meanwhile build slowly and soundly, word by word, the vocabulary, the knowledge, needed to scale the desired height.

Were those men and women who find vocabulary difficult the low aptitude group, civilization might justly delegate them to low-vocabulary jobs. But as yet the Human Engineering Laboratory discovers no significant relation between the extent of one's knowledge, as indicated by vocabulary, and the thirteen measurable aptitudes. Unless educators destine the latter to lie idle, to cause restlessness, dissatisfaction, unhappiness, they must supply the words, the knowledge, the skills, the tools commensurate with existent aptitudes.

The man whose aptitudes and type of knowledge coincide achieves an enviable place. But the matching of the two is not so simple as one imagines. The thirteen now measurable aptitudes appear in more than eight thousand combinations, so that of eight thousand persons tested no two score alike. As work should tax one's every aptitude, these eight thousand persons require as many different jobs, probably as many different skills and types of knowledge. Yet many come to the Laboratory with the erroneous impression that someone can guide them into a stereotyped groove which will satisfy their cravings. Ordinarily no set task challenges to the full the measurable gifts of any individual, and if such exists, the chance of finding it is negligible.

Even business executives request this Laboratory to test applicants not realizing the slim chance of stumbling upon the one perfectly equipped man or woman in eight thousand. One unselected applicant in every four grades A by definition in any single requisite,—in *accounting aptitude* for clerical work, in *finger dexterity* for small assembly, in *structural visualization* for machine setup, —and most executives accept this person quite unmindful of accompanying aptitudes which forebode trouble. One applicant in sixteen grades A in two specific requisites—for example, the combination *structural visualization* and *observation* required for airplane inspection, or *structural visualization* and *tweezer dexterity*, required for miniature instrument repair. Only one applicant in sixty-four grades A in any specified three—for instance, *structural visualization*, *tweezer dexterity*, and *subjectivity*, characteristics of the toolmaker, and the airplane mechanic. In consequence an employer seeking an applicant to hold a three-aptitude or four-aptitude job rarely finds him, and so comes to view the world as incapable, not realizing that the individual lacks merely the peculiar qualifications desired at the moment.

Even should the employer come upon the ideal applicant, or the individual land the perfect job, human beings are not static mechanisms, to relegate to permanent compartments, but living organisms. Men shift, advance, develop, and routine jobs unexpectedly disintegrate.

Business must inventory inactive aptitudes from the beginning, so that when an opening arises which demands two, it may give the opportunity to someone on the payroll now using one. It must shift the mechanic with the *structural visualization* needed for his job, and *observation* in addition, into the higher types of mechanical inspection where he can use both traits. It must shift another mechanic high in the same *structural visualization*, and in addition *objective* in personality, into the supervision of airplane construction, perhaps; and shift still a third, high in *structural visualization* and high also in *creative imagination*, to the construction of experimental models in cooperation with the engineering department, or to the building of new designs which tax his ingenuity. The successful executive views promotion as inevitably into the executive ranks, and forgets that, for others, a

chance to use two aptitudes instead of one contributes more to happiness than an executive title, even more, perhaps, than a raise in pay.

Is it practical to stimulate with unsolved world problems the overwhelming majority of humanity that discloses more aptitudes than it exerts? Applied in the right direction, aptitudes break new ground, push back the unknown; while knowledge and vocabulary tell merely how to do again something already done before. Only a few decades ago, the United States granted ambitious men uncleared land in the Far West, automatically forcing them to exert aptitudes merely to exist. Despite the vast tracts thus dispensed, the government rarely encountered a dearth of volunteers even for so hazardous a task, which demanded untold labor. Men of this country never fear work which challenges capacity; but those who today go West, hoping to meet the same problems, discover no untilled land, no unpenetrated forests to fell.

Youth turned from such dangers to so-called white-collar jobs, not for dread of work, but for want of opportunity; for America progresses by reducing the hand operations needed to live. The next step ahead is not a return to physical labor, but an attack on a new frontier, for only at such a point can one hope to use every aptitude. Since land frontiers have virtually disappeared, the new goal is probably the frontier of human understanding.

The difference between a job one executes by rote and the vivid exploring of unknown regions is more a manner of thinking than of acting. Jobs are ephemeral—particularly war jobs, which must be done well and rapidly, with all one's energies, but which seldom last forever. One who regards his daily job as ultimate security loses with it, should it vanish, his ambition, his goal, and confidence in himself. But aptitudes remain; one who knows his own grasps with greater certainty each opportunity which life presents, faces each decision more intelligently, with less chance of restlessness and discontent. To one who builds life about his own combination of characteristics, whose ambition is to use his aptitudes more fully, the loss of a job presents no catastrophe, but rather an opportunity for new experiences. Perhaps even more important, such a person seldom loses the job, for as he gropes to exert his aptitudes, the job grows under him. It becomes no longer a monotonous carrying out of orders, but a solving of problems, never finished, for in the history of human knowledge the solution of each mystery has but uncovered others equally obscure.

Instead of advising some specific nine-to-five job, the Laboratory furnishes each person an inventory of his or her own aptitudes about which to build life; for while every adult recognizes without tests one trait he possesses, and often uses it, almost no one classifies his capabilities clearly in terms of as many as thirteen. With an itemized list, arranged in order of preeminence, the most outstanding aptitude first, one ultimately finds occasion to integrate at least the more important. The Laboratory illustrates, in such of its brochures as *Unsolved Business Problems*, known applications of each aptitude, but it can predict future developments no more than can the chemist who discovers a new element. Occasionally the Laboratory suggests a use for some specific combination of two aptitudes, but an integrated, constructive use of four, five, or more aptitudes demands painstaking study and presents the individual with a life's problem equivalent to that confronting industry in seeking a use for some waste product.

Democracy faces the challenge, not of the rare individual with a single aptitude, for such an exceptional person succeeds today without help, but of the normal man or woman eager to apply five, six, seven, or more idle traits. *A priori* no democracy can

survive without furnishing a considerable number of its citizens both a right to pursue happiness and some chance of savoring it. The majority which rules seeks satisfaction from the government or changes it, not necessarily for the better, but inevitably to something different.

Nations, vividly aware of unmistakable defenselessness, miss the total picture. France constructed elaborate fortifications, conscripted a huge army with devastating expenditure of money and youthful years; but its troubles came in the end from within as much as from without. To outlive this world revolution, America must manifestly strengthen its physical defenses, but must spend an equal sum reenforcing itself from within by building richer satisfaction, fuller happiness, by aiding large masses of its citizens to use their now measurable aptitudes.

# THE EMERGENCE OF A NATIONAL LABOR MARKET

EWAN CLAGUE

*Director, Bureau of Employment Security*
*Federal Security Agency*

TODAY, the nation is rearming for defense. We are engaged in a tremendous program involving the building of a two-ocean navy, enough equipment and facilities for hundreds of thousands of men in the armed forces, and we are laying in stores of essential metals and materials. Large and increased operations in industries such as aircraft, ship building, construction, clothing, and munitions have created unparalleled demands for workers of all types. Not all production has reached a peak, for there must be a period of preparation while production is carried through the successive steps of the blue prints, the tooling up, the working out of flow charts and the training of workers. However, during the coming few months it is expected that production will reach its peak and that acute stringencies will develop in the labor market; particularly for highly trained workers. This impact of the national defense effort on the labor market of the nation has transposed the former limited placement horizon into a broad placement horizon which reaches from coast to coast.

Shipbuilders who moved to farms in the middle west are now going back to the shipyards on the Atlantic and Pacific coasts. Many doctors, lawyers, engineers, draftsmen, accountants, production managers, and the personnel experts are leaving the large urban centers to work in and serve the needs of the communities which must be built so that the workers in munitions factories, powder plants, and aircraft plants located away from geographic centers may have homes accessible to their places of work.

Of major importance in this direction of the nation's workers to the places where they are most needed is the national clearance machinery of the United States Employment Service. This service has been designated as a defense agency and as such is playing a leading role in the recruitment of all kinds of workers for defense industries. The United States Employment Service, through its nation-wide network of 1500 full-time local offices and 3000 part-time offices, prior to the defense program placed major emphasis upon registration and placement activities indicated by local labor requirements with only limited attention directed to inter-community and inter-regional problems. This limited attention was due in large part to the existence of a labor supply generally in excess of local and regional needs. The emergence of the defense program and sharp expansion in worker needs in essential industries necessitated a re-orientation of the work of the employment service toward the end that consideration be given to national labor requirements.

Accordingly the clearance system which had only infrequently been used in the past was reappraised and a streamlined organization and procedures were instituted for orderly transfer of workers from communities where job opportunities were lacking to localities where increased labor demands were arising and where relatively few workers were available from local sources. Federal regional clearance offices were established for interstate clearance of workers. These offices cooperate with State employment services in the transfer of workers after local offices have exhausted the available local supply with respect to specific occupations for which employment opportunities exist and when workers with such

qualifications as are required cannot be obtained in the State.

The employment service first used the clearance offices to assist the Civil Service Commission in recruiting workers required at governmental defense establishments. The operating procedures for this nation-wide clearance system are now well established and are working effectively in bringing about an orderly organization of the labor market and in minimizing unnecessary migration of labor as well as the dislocation of the labor market.

Coupled with the demand for an effective nation-wide clearance program came widespread demands from many sources for comprehensive information regarding current developments in the labor market. In so far as the public employment service, through its network of local offices and facilities, provided the best means of obtaining this information, steps were taken immediately to provide through revised tabulation procedures more current information derived from the regular statistical reports on employment service activities and operations.

The current labor market information was necessary for planning the allocation of defense contracts, location of new plant sites, planning training activities, and meeting housing problems. The employment service established a list of selected occupations essential to the defense program. Information on available workers is obtained at monthly intervals. Another important report developed as a result of the defense program provides information at monthly intervals on the anticipated labor requirements of over 20,000 selected employers in defense industries. This information is obtained through regular field visits of local office personnel to these employers at 30-day intervals. The information is obtained regarding their anticipated labor requirements for the ensuing 60 days by occupation, age, citizenship, union status, and any other important hiring requirements. In addition, monthly narrative reports are prepared of current developments in the labor market with special emphasis upon changes in the supply of labor, trends in employer demands for labor, modifications in hiring practices, competitive recruitment of labor, and implications of training, housing, and labor relations problems in the labor market. The reports are based upon the informed opinion and judgment of local office personnel for each locality and are summarized in each State and submitted to Washington.

Shortly before the emergence of the defense program the United States Employment Service issued a Dictionary of Occupational Titles containing definitions for approximately 18,000 different occupations. This dictionary plus the thousands of actual job descriptions, special selection techniques for a great many occupations, and oral trade questions, represents the most comprehensive source of information in this country on occupational characteristics and aids the offices in accomplishing an effective recruitment program.

Now that employment areas are no longer bounded by State lines to the extent that they were previously, it is essential that all of the nation's available man power be known in terms of its location so that it can be utilized in the best manner possible both in terms of the individual and the nation.

The colleges and universities of the United States through their educational facilities are training the men and women which the nation needs in civilian, industrial, and military life to make our scientific and material mastery more certain. Industries need the engineers, the administrators, the technicians, and the specialists which the universities and colleges are graduating each year. This need for professionally trained personnel is evident in the various defense

training programs which are under way in the colleges training engineers and air pilots. As needs develop it is not unlikely that such requests for training for other types of professions will arise.

The placement of professional workers requires specially adapted and fairly elaborate techniques to meet their placement needs realistically. For many years college placement offices have developed the procedures and methods to meet the placement needs of the graduates and alumni of their respective institutions. Many have maintained comprehensive records of the occupationally significant items of each graduate's college career and his progress in positions after college. They have available valuable files of personnel records of professionally trained persons who have the abilities which are wanted by employers. In other words, the college placement offices have at their command important reserves of workers essential to the nation's industrial development and who are specially needed during this period of defense preparation. Some of the offices of the United States Employment Service have been aware of this reserve of professional workers and have called upon the colleges for assistance in filling certain special employment openings available to professionally trained persons. However, due to a variety of circumstances, these cooperative relationships have not been uniformly adopted. It seems especially important at this time that the employment service and the college placement offices extend these cooperative working arrangements.

I should like to urge that college placement offices make known to the employment service the kinds of professional workers who are interested in employment opportunities, so that when employment offices are informed of suitable opportunities for men and women in various professional capacities they will use to the maximum capacity the resources of the college placement organizations. College placement offices should feel free to consult with employment offices for information regarding current developments in the labor market of the nation. The United States Employment Service would be extremely interested in receiving from the various college placement services any suggestions with respect to the kinds of cooperation which are most desirable and practicable between the public employment offices and the college placement offices.

PHILADELPHIA ELECTRIC COMPANY

*Live Electrically & Save*

# VOCATIONAL SELF-GUIDANCE

EDWARD G. CORNELIUS

*Assistant Professor of Economics*
*Bucknell University*

WHY Vocational Guidance? One very good answer is found in the words of Mr. Sidney W. Edlund, founder of Man Marketing Clinic, who says "There is a wide chasm between school and the business world. For years the average pupil has been studying lessons so he may pass examinations. Suddenly he finishes school and finds himself in an entirely different world with different standards. In school everybody was given a chance. In business, he finds the only ones considered are those who give some evidence that they will earn their pay and a little extra. There is great advantage in fostering early the student's interest in his future, and the sense of purpose will give more meaning to his studies, his reading, his conversations." Vocational guidance can help the student bridge the chasm between school and the business world. If this bridge can be built by the student while he is in school, it will make it easier for him to choose, prepare, locate, contact, and sell his services to the right employer. Correct guidance and placement can be the means of saving a young person years of valuable time.

*Dr. Cornelius*

Why Self-Guidance? Another very good answer is found in a statement of the National Youth Administration of Wisconsin: "Choosing the vocation a youth should follow is next in importance to selecting the person whom he or she is to marry. In either case it is quite impossible to turn the choice over to others. Since so much is dependent upon the choice, he should not, even though he could, depend upon someone else to make the choice for him." Self-guidance tends toward education on an individual, rather than a group, basis. It places upon teachers and schools the very important responsibility of planning and using an effective method to stimulate the student to think rather than memorize facts, to plan his future rather than wait for a future to take him by the hand and lead him into a promised or desired land of peace and plenty.

An effective program of vocational self-guidance can probably be based on the following general assumptions: First, the best guidance of all is self-guidance, because an intelligent individual can, with help, determine better than anyone else what he can do best and what he likes to do, the first two steps in any effective vocational guidance program. Second, the average student is intelligent enough to make sound vocational choices, provided he is given enough stimulation, proper factual aids, and sound advice by parents, teachers, friends and business men. Third, there must be a close tie-up between the student, teachers, the placement bureau, and the business world in order that the student may put purpose into his work, planning into the selection of his courses, and find a goal toward which he is moving. Finally, the student who is well prepared for a job must master the techniques of selling his assets or abilities to the firm having the type of job he wants and is best qualified to handle.

Vocational self-guidance, with assistance, is undertaken believing the student will give

much serious thought and effort toward making an honest and complete self-analysis in order that he may understand himself, his assets and liabilities. He must see how he "looks on paper" in order that he may see the value of, and begin a systematic building up of, assets and personal traits which, in combination, constitute a good personality. The student must make a thorough vocational analysis, one which will give him facts about all vocations in which he has interest, so it will be easier for him to select the one vocation he likes best and is best qualified to master. He must conscientiously prepare for his chosen work, not merely through vocational courses, but also in general background and cultural courses. Finally, he must master the techniques necessary if he is to effectively locate, interview and sell his services to, the better prospects.

Effective vocational self-guidance requires method. The best method is one which will really stimulate the student to think, plan and prepare; give him the best possible advice about himself, the business world, ways to prepare for life, and the most effective way to market his services.

To make it possible for the student who plans a business career to have the advantages of directed self-guidance, two courses, one on the freshman-sophomore level, and one on the junior-senior level, are being offered at Bucknell University. The major steps for each course are outlined below.

*Business Education.* A survey course for freshmen and sophomores majoring in Economics, Commerce and Finance, includes study of the fundamental facts underlying each phase of modern industry in order that the student may better understand business as a whole, and therefore be able to determine more effectively which phase of industry he is best qualified to enter. He is given the opportunity of meeting and questioning a number of well-qualified persons, representing various fields, who have agreed to help in this practical guidance program.

After some study and discussion of self-analysis, the student prepares a self-analysis project with the aid of parents, teachers and friends. Assets and liabilities are listed, studied and analyzed. Next, after a study and discussion of several vocations, the student prepares a vocational analysis. This is designed to help him locate the vocation he prefers, and for which he is best suited. Up-to-date materials on all vocations are available for the student as he undertakes this project.

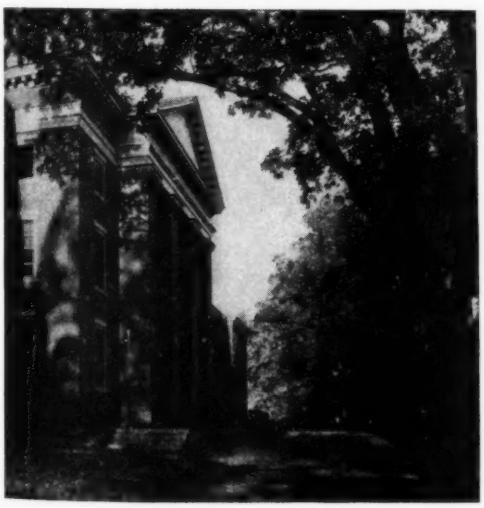
The director of the placement bureau then meets with the class and explains fully what the bureau is, what it can do for the student, and what the student can do for himself in cooperation with the bureau. This part of the course impresses upon the student the fact that he will, within four years, seek employment, and that an early start usually means a better job. Finally, the student is given the advantages to be derived from expert advice given by a number of qualified advisers who agree to meet the individual students and discuss their problems, and offer such suggestions as will be most helpful.

*Salesmanship.* A course on the junior-senior level re-emphasizes certain projects which the student completed while taking the first course. The projects re-emphasized are self-analysis, vocational analysis, and a re-statement by the director of placement as to his ability to help the student and methods the student can best follow in seeking employment, not only through the placement bureau but also independently of it. Because the students are older, have had more experience, and are closer to the day when they must step into the business world in search of employment, they usually do better at self-analysis and vocational analysis than in the original course.

In addition to the re-emphasis of subjects treated earlier, during the term the student in this advanced course organizes a

personal sales campaign, designed to help him prepare and refine a personal marketing project to get the job he wants and has prepared for. The training involved in this project emphasizes the necessity for putting on paper all personal data which will aid the job-seeker in getting attention, creating interest, and in securing the right job.

The student who has shown proficiency in his work up to this point, is ready for a series of clinics. These are held in the classroom, under the general guidance of the director of placement. As part of the classwork, the student has already prepared and is now ready to present at the clinic, letters of application and personal data sheets. Each letter is read and students particularly are asked to offer suggestions for improvement. Each data sheet is read and again the students point out any additional assets the owner of the data sheet might include. After the first clinic, each student improves his campaign, and again presents his materials for constructive criticism at the next meeting.



*"Old Main"—Bucknell University*

Other clinics are held by experts brought to the campus for this purpose. The work done in these clinics not only helps the student prepare more effective marketing techniques but it also gives him valuable experience in interviewing. The practice interviews do much to get the student over his nervousness, showing him how to approach the interviewer and how to talk to a personnel man who, after all, is a buyer of personal services.

The director of placement, and the teacher, arrange hours during which any student may come in for personal interviews and for constructive suggestions in connection with letters of application and personal data sheets, which are sent by the student to prospective employers. Finally, the director of placement arranges interviews for these students with the increasingly large number of personnel directors who visit the campus in search of prospective employees. Each visitor is furnished with a private office, personal data sheets, and recommendations for each student. The director of placement schedules the interviews, and furnishes such additional information as may be required by the personnel man.

The writer, who is also the teacher of the two classes discussed, has in mind first the development of a sound philosophy of business education; second, a method which will stimulate the student to make a careful and critical analysis of himself, the business world and the various techniques for marketing his own services; third, the creation of desire on the part of the student to select carefully each course he pursues whether it be general, cultural or technical, and to make it serve him; and finally, to sell to the student the idea of building within himself such personal traits as will help him to become an efficient worker, a good citizen, and a happy individual.

# THE PLACEMENT PROBLEM OF SECONDARY SCHOOL YOUTH

JOHN R. BEERY

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*National Association of Secondary-School Principals*

WHILE the investigation upon which the following discussion is based was not primarily concerned with placement *per se*, it did include, among many other things, a consideration of the effectiveness of placement activities in six typical secondary schools. For example, and speaking for the moment from a purely quantitative point of view, it was discovered that less than one in twenty-five of the former students of these schools had secured their first jobs through the school authorities.

*Mr. Beery*

The Occupational Adjustment Study was set up by the National Association of Secondary-School Principals, a department of the National Education Association, in July 1939, under a grant from the General Education Board. The study had two general purposes: (1) to examine existing secondary school practices in their relation to the subsequent occupational life of school-leavers, with a view to discovering whether certain of these practices seemed to lead to better occupational adjustment on the part of these youth, and (2) to develop a simple yet dependable survey-plan whereby an individual school could examine the occupational adjustment of its own school-leavers. General reports on these two aspects of the study are available elsewhere.[1] This paper will be confined to a brief discussion of some aspects of the investigation bearing upon the problems of placement.

The study was carried on in six one-school communities within a two hundred mile radius of New York City. The schools were typical of hundreds of similar ones throughout the country. Agricultural, industrial and suburban communities were included, and they ranged in population from six to thirty-four thousand. The high schools ranged in size from less than three hundred to nearly eighteen hundred pupils.

The study was primarily concerned with "school-leavers," those youth whose formal, full-time schooling ceases during or at the end of the secondary school period. From the total of over five thousand drop-outs and graduates of the six schools who had been out from one and a half to five and a half years, and who had not continued with any sort of full-time training after they left the high school, a random sample was selected. For various reasons married girls were not included in the sample.

During the course of the investigation, complete work histories were obtained from more than nine hundred of these young people. The work histories were taken by trained interviewers during individual interviews of sixty to seventy-five minutes in length. They were based on a carefully worked-out interview schedule. The reliability of the data collected was checked by

[1] Edward Landy and Associates. *Occupational Adjustment and the School.* Bulletin of the National Association of Secondary-School Principals, No. 93, November 1940.

Edward Landy. "Principals Offered Follow-Up Program," *Occupations: the Vocational Guidance Magazine.* Vol. XIX, pp. 266-272.

repeat interviews with a sample of the groups after an interval of a week or so. The interviews were held during the months of December, 1939, and January, 1940.

In compiling the work histories, special attention was given to the present or last regular job of the youth, and also to the first job he secured after leaving school. In each case he was asked how he got the job, and the interviewer probed the circumstances cited until the response could be properly classified. Where possible, these responses were checked in the interviews with the employer and with the school.

Following is a list of the categories into which responses were classified, with the percentages of youth securing their first jobs and their present jobs by each. The percentages listed are a composite obtained by weighing the percentages in each school according to the total number of school-leavers from that school.

| How Secured | First Job | Present (or Last Regular) Job |
|---|---|---|
| Employed by relative or friend.. | 16.6 | 10.9 |
| Influence of relative or friend.... | 39.3 | 37.5 |
| Previous work for employer..... | 2.4 | 4.4 |
| School authorities..... | 3.3 | 2.8 |
| Public employment agency..... | 0.9 | 2.6 |
| Commercial employment agency. | 1.6 | 1.9 |
| Answering advertisements..... | 1.4 | 1.5 |
| Personal applications..... | 31.4 | 34.9 |
| Unclassified..... | 3.1 | 3.5 |
| | 100.0 | 100.0 |

It will be noted that for the type of youth included in this study the home is still the chief job-finding agency. Over half were employed by someone in their families, by friends of the families, or because of the influence of some such person. While this method of placement probably works out to the satisfaction of both the employer and employee involved, it does place a premium on being born into the right family, or having the right friends. The democratic principle of equal opportunity for all would seem to imply an obligation on the part of public agencies to seek out possible placements for those of less fortunate family connections.

Young people in the communities studied were finding their jobs with practically no effective assistance from public agencies. Less than three percent of them secured their present or last regular jobs through the known assistance of the school. And less than three percent of them got their jobs through a public employment agency, although there was one in each of the towns, or in a nearby community.

To determine whether agencies other than the school might be aiding youth in their occupational plans, a careful check was made on all existing youth-serving organizations. When any one of them seemed to have been helping these young people, the officers in charge were given a list of those being studied in the community, and asked to indicate the ones with whom they had had contact and the nature of that contact. This procedure was also followed with the State Employment Service offices. Of course there may have been help given for which no record was kept and which was forgotten by both the agency and the recipient, but the number of youth for whom the agencies knew of some definite service rendered was very small. The reports from the agencies corroborated the information gathered by the interviewers.

The evidence presented about the State Employment Service offices is in no way meant to be a reflection on their efficiency or usefulness. They may have been, and probably were, doing an excellent job of finding employment for older and more experienced workers in the community. Perhaps they did not consider the placing of inexperienced school-leavers as one of their major concerns. In any event, this study was concerned with recent school-leavers and it was found in these communities that very few of the youth were being placed in jobs by either the school or the State Employment

Service. It is the writer's opinion that these conditions are not atypical.

None of the schools had a special placement officer or any kind of formal placement service, although one of them was in the midst of the establishment of such an office at the time the study was being made. All of the schools, however, claimed that placement activities of an unorganized nature were being carried on by the principal and teachers. This usually seemed to amount to no more than trying to find some one to send out if and when a call for help happened to come to the school.

The proportion of those being placed in their initial jobs by the schools ranged from about one percent in the lowest school to a little over eight percent in the highest school. In the latter, the principal made it his business to be acquainted with the employers in his community. He was a member of the Rotary Club and various church organizations; he helped organize a youth committee in his service club, and employers were encouraged to 'phone the school when they needed help. An informal card index of recent graduates who were unemployed was kept in his office. In most of the schools, however, there was not even this amount of coordination of the placement efforts which were being made by the various administrative officers and teachers.

Nor was the lack of placement due to the unavailability of jobs. Eighty-five percent of the school-leavers were employed at the time of the interviews and practically all of the rest were seeking employment. Only about one percent had never had a job since leaving school.

About two out of five of the youth were acting as their own placement officers, usually making random personal applications until some sort of job was obtained. In this connection, it is interesting to note that when the employers were asked how they happened to hire these youth, the second most frequently mentioned source of contact was a personal application by the youth. (The most frequent source was friends or relatives.) The employers also indicated that they did their hiring on the basis of the applicant's appearance and personality as revealed in this initial interview. While it is true in some cases that forward-looking employers are using more objective measures, the fact remains that about a third of the youth studied were hired as a result of a short, personal interview. This seems to imply that the school should impress upon the potential school-leavers the necessity for making a good initial appearance, and teach them to do so.

It is not the belief of the writer that an active placement officer in these schools would have reduced to any great extent the amount of unemployment among the school-leavers. The number of available jobs at a given time in a community are to a great extent the result of factors over which the school has little or no control. The justification of placement efforts lies not so much in increased numbers of employed as it does in increased satisfaction on the part of the employer and increased occupational adjustment on the part of the employee. The school probably can not do much in the way of increasing the number of available jobs, but it can do a lot in the way of seeing that the best qualified are placed in jobs for which they are fitted.

The first job a youth gets after leaving school is an important one. It usually serves as his first introduction to the full-time working world. It should provide him with an opportunity to fit into work he can do and in which he is interested. For the more capable, it may lead to advancement. It should lend a feeling of success, of belonging, of independence and responsibility; it may create within the worker feelings of despondence and frustration. Unless the school holds the view that its responsibility

for the youth ceases at the exact moment he turns in his books for the last time, it seems to have a clear-cut obligation to do all that it can to see that the first job which he enters is reasonably in harmony with his interests and abilities.

Over sixty percent of those interviewed took their first job with no consideration other than that it was a job. Ten percent said they had considered such matters as pay, permanence of employment, possibilities for advancement, interest in the work, etc., yet about half of them left their first jobs because of these very considerations. It may be that this practice of grasping at any job at all is inevitable in times of scarcity of employment, but it seems reasonable to expect that the school should try to develop within the youth some simple skills for appraisal of job situations and then try to implement the program with placement activities.

If one accepts occupational adjustment as an objective of placement, it is seen that placement must be considered more than just the bringing together of employer and prospective employee. It is not a problem that arises merely at or just before the youth leaves school. It begins long before that. It should be given consideration in his high school guidance program. Even the matter of the student's choice of curriculum should be based on at least some elementary occupational planning both by him and by the administrative officers. How can a school justify a policy which takes over sixty percent of its future school-leavers through the commercial curriculum when only thirty-five percent of its commercial students are subsequently finding jobs in clerical, sales and kindred occupations?

Placement becomes a difficult problem and proper occupational adjustment is almost impossible when so many leave school with the "white-collar complex." One boy had been a mediocre commercial student in school; when he was unable to get an office job, his father had him placed as an apprentice machinist. He had been employed practically all the time since then at wages reaching as high as forty dollars a week, yet he felt so frustrated over not having an "office job" that he was under psychiatric treatment at the time of the interview. Or, there was the girl who had a job as maid in a wealthy home. She received board and room and about twenty-two dollars a week, with liberal arrangements as to hours. She had no complaint to make about the way she was treated, but thought she ought to be doing secretarial work, and said she would have taken such a job at fifteen dollars a week with no meals or lodging, in preference to the one she had.

It is of direct concern to the placement officer if the school program is developing what Malcolm MacLean has called the "bigger and better big-shot complex." Not that the school-leavers should be conditioned to accept uncomplainingly whatever jobs happen to be open to them. By no means. But it seems only fair to them that their guidance should be as realistic as possible and based on available employment possibilities.[2] They should be encouraged to think about their jobs in terms of salary, working conditions, possibilities for advancement, permanence of employment, social utility, etc., instead of in terms of some external and indefensible scale of social acceptability.

It is obvious that the problems of placement for the school-leavers from the typical high school are quite different from those facing the college placement officer or the placement officer in a trade school. No representatives of large industries call to interview candidates for a "loop course" of

[2] In the six communities studied last year it was found that ninety percent of the school-leavers who had been out of school five and a half years or less were still in the community in which they had gone to school, and were finding their work there.

special training. For the majority of these youth there is no possibility of apprenticeship training in a skilled trade. With the exception of the commercial graduates, the great bulk of them possess no specially developed vocational skill. For the most part they must get their start in jobs which require little or no specific training. But this does not imply that it is useless to put time and effort into placement activities for these youth. Finding suitable employment is just as big a personal problem to them as individuals as it is to anyone else.

Many of our leaders in educational thought are now advocating that the secondary school keep a youth until he is ready to take a job and until there is a job ready for him. If the school and society as a whole accept this challenge, then formal graduation will largely be a thing of the past, the length of stay in the secondary school will vary with the individual, and placement will be an integral part of the program.

It is not the purpose of this paper to enter a discussion as to whether the placement of these youth should be a responsibility of the school, of some other public agency working in close cooperation with the school, or of both. This matter has been the subject of an extended investigation.[3] It is merely pointed out here that for the recent school-leavers in the six communities included in the Occupational Adjustment Study, and presumably in many similar communities, neither agency was being very effective in the way of making placements. The evidence also seems to the writer to indicate that there is a great need for effective and enlightened placement work with these youth.

[3]Howard M. Bell. *Matching Youth and Jobs.* Washington, D. C. The American Council on Education, 1940.

Perhaps there is some branch of our business which appeals to you as a life career—either in this country or abroad. We require a limited number of qualified young men each year. The Director of your University Placement Service has information on file about our Company. Consult him; he will be glad to assist you.

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# SELLING YOUR SERVICES

WESLEY E. SCOTT
*Head, Department of Commerce*
*South Philadelphia High School for Boys*
and
DONALD A. HILSEE
*Instructor, Retail Selling*
*South Philadelphia High School for Boys*

ONE unit of the course in Retail Selling, as presented by the South Philadelphia (Pa.) High School for Boys is entitled "Selling Your Services." This is presented according to the following outline:

1. Mental preparation for the personal interview in applying for work.
   a. Development of confidence through knowledge of trained abilities
   b. Development of a proper emotional attitude toward business authority
2. Physical preparation
   a. Realization of the importance of neat, clean clothes
   b. Bodily cleanliness
   c. Proper food and sufficient sleep and exercise so as to be alert in times of stress
3. Economic preparation
   a. Acquisition of some skill or skills that a business man wants to buy
   b. Translation of school attitudes into business efficiency
   c. Training of students' interest and abilities into a marketable "package"
4. Importance of adequate letter of application, stressing:
   a. Exactness
   b. Neatness
   c. Information
   d. Arrangement
   e. Individuality
5. Practice in filling of application blanks
6. Demonstration of the oral interview
   a. Use of proper language
   b. Conduct and bearing
   c. Honest, straight-forward analysis of student's record and desires

During the school term the students are urged to select some activity which they would like to follow in the business world. The selection having been made, each student must ferret out all the facts he possibly can about the manufacturing processes, selling problems, accounting systems, and governmental regulations, through reading, observations and inquiry. He is then encouraged to prepare for some definite service in this line of work. When the time comes to apply for the actual position, he will "speak the language" of the business man, and thus gain a definite advantage in competition with other applicants for the job. Through guidance and a study of individual differences of the students, the school attempts to locate the "right" position for both boy and employer.

It is known that many high school boys are well-trained in the various skills on which they have worked in school, and yet lack that sense of "salesmanship" needed to impress prospective employers. In order to help the boys overcome this shyness, it is necessary to present demonstrations of actual situations so that the "rough edges" of the young men may be smoothed, and individual confidence be created and restored. The boys are ready and willing to work, but some have difficulty in locating positions, so as a culmination of class activities, a dramatization of "Selling Your Services" was presented at the January, 1941, commencement exercises, as an aid to the graduates in overcoming some of their emotional difficulties.

# VOCATIONAL GUIDANCE IN THE SWARTHMORE HIGH SCHOOL

HARRY E. OPPENLANDER

*Head, Science Department*
*Chairman, Faculty Committee on Guidance*
*Swarthmore High School*

THE Swarthmore (Pa.) High School has recently incorporated in its guidance program a new service which, it is believed, has certain unique features. In conjunction with the Psychological Service of the Institute of the Pennsylvania Hospital, and under the direction of Dr. Edward M. Westburgh, a comprehensive program of vocational guidance for all seniors has been inaugurated this year.

For a number of years schools in this area have referred pupils to the Institute for educational and vocational guidance. The arrangement in such cases, however, has been between the family of the pupil and the Institute. The present plan represents a new departure in that the staff of the Institute is working directly with the school and its services are considered an integral part of the school's guidance program available to all members of the senior class.

The procedures in the program include the following steps: first, obtaining basic data concerning the pupil; second, the analysis and interpretation of these data; third, individual interviews by the guidance consultant of the Institute with all seniors who desire them; fourth, a series of evening meetings in which vocational opportunities in the various major fields, job-getting, and the selection of a college are discussed; and fifth, an evaluation of the program.

In obtaining basic data concerning the pupil the school's extensive cumulative record is supplemented by a Personal and Family History Form prepared by the staff of the Institute and filled in by the pupil. A comprehensive Vocational Preference Form is also used to obtain vocational choices. Finally, a battery of tests is administered. Included are verbal intelligence tests, a non-verbal symbolic-visual test, a paper formboard test, a reading test, and vocabulary tests. Of particular significance are the data relative to the pupil's personality obtained from the anecdotal records prepared by teachers over a period of years.

In analysing and interpreting these data the conference method is used. Those participating in the conference are the supervising principal, the high school principal, the teachers acquainted with the pupil, and the vocational guidance consultant of the Institute. Each pupil's record, test scores, achievements, and personality are reviewed and discussed in relation to the vocational choices indicated by him. On the basis of this discussion certain suggestions and recommendations are proposed by the guidance consultant.

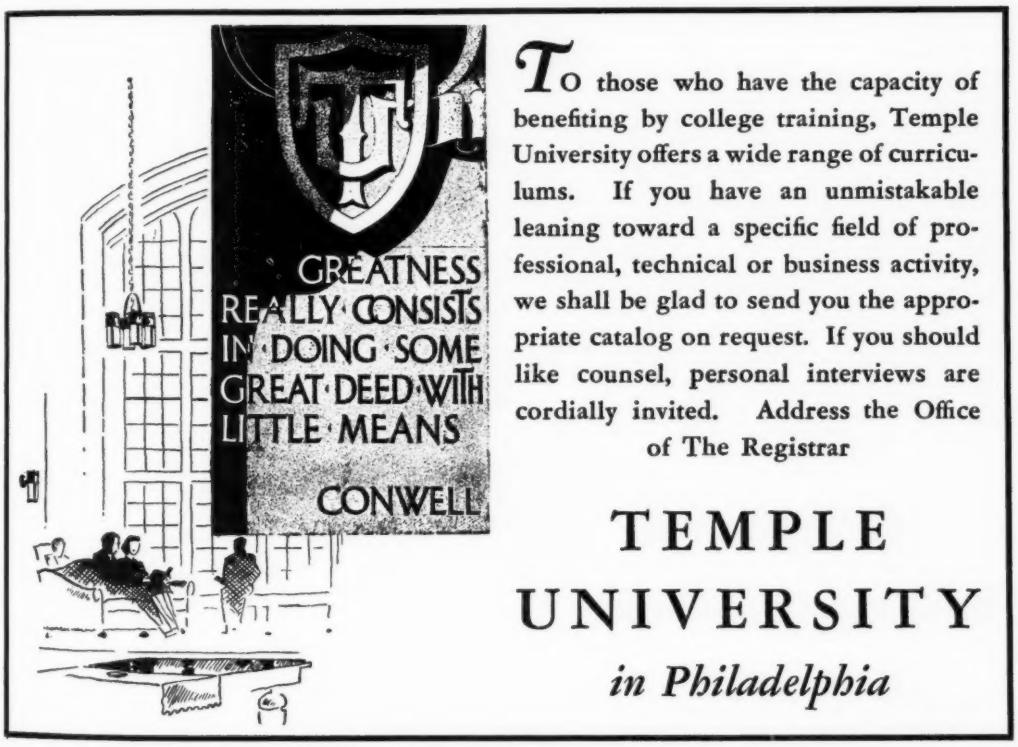
Then follows an interview by the guidance consultant with those pupils who indicate a need for counseling and those whose school record, test results, and personality pattern are not in agreement with their vocational or college choices. Where there is agreement and the pupil has not requested an interview a memorandum is given him, indicating a satisfactory choice.

Concurrent with the individual interviews are the evening discussion groups participated in by leaders in the various divisions of the major vocational fields. The fields represented are the professions, music and the arts, manufacturing and engineering, and business. One meeting is devoted to each of these fields. A meeting of a more general nature is held for those pupils who

do not plan to go to college, in which such problems as job-getting, work relations, opportunities, wages and promotions, etc., are discussed. Finally a meeting is arranged for the purpose of discussing the problem of choosing a college, the relationship of high school and college experiences, etc. All of these meetings are attended by the vocational guidance consultant and faculty representatives, as well as members of the senior class.

In order that pupils may further explore their vocational interests a carefully selected guidance library is provided and utilized.

An important part of this program will be the evaluation of the results achieved. Attention is called to the fact that the whole plan has been conceived from an experimental point of view. What can be achieved by the cooperation of the staff of the Institute and the faculty of the Swarthmore High School? How can the school best utilize the specialized services of the Institute? Can the services of the Institute be extended to include a comprehensive and intensive program for an entire school? These are some of the questions which this experimental program will seek to answer.

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*in Philadelphia*

# SPOTLIGHTING CAREERS FOR HIGH SCHOOL STUDENTS

MILLARD E. GLADFELTER

*Registrar, Temple University*

IN March of this year Temple University will offer to high school students of metropolitan Philadelphia the opportunity to enlighten themselves on a selected list of careers through the Seventh Annual Career Conference. This conference represents an attempt to meet the growing concern of parents about the career problems of their children and the increasing interest of youth in an intelligent evaluation of vocational fields.

*Mr. Gladfelter*

The Conference grew out of a careful study of various forms in which these interests were expressing themselves among secondary schools, colleges and industrial organizations. During the past ten years, secondary schools began sponsoring a series of college nights, and the colleges subfreshman days. These programs were intended primarily to give helpful information which was frequently overshadowed, however, by the competitive spirit or the desirability of selling a program or an institution. From them are emerging more constructive programs in the form of vocational conferences which have been conducted by industrial organizations and department stores, and the career conferences which had their inception at Temple University in 1934. This type of program is now being used by many colleges and universities, including a statewide program in Colorado. The idea used has also been adopted by many secondary schools in the form of a series of vocational conferences. The emergence of these programs is doubtless due to the increasing interest of parents in the characteristics, abilities and aptitudes demanded for admission to the many vocational fields.

Because of the secondary school interest in vocational guidance, youth also has become aware of the importance of an intelligent approach to the career problem.

The primary purpose of the Temple University career conference was to bring from the eastern part of the United States men and women who were best qualified to discuss the requirements for and the possibilities in the various vocational areas. A successful conference leader must be intimately acquainted with the problems which concern supply and demand in admission to, and requirements for success in, his field. The 34 group conferences range from skilled mechanical trades and technical occupations to the medical profession and offer the 1600 youths who attend the conference an opportunity to ask questions and talk informally with the leader. The list of conferences offered is determined by the students through a previously submitted check list. A conference leader is then asked to be prepared to discuss the topics which are submitted to him in outline form and to answer questions asked by the students. The most popular conferences have been in the following fields: Chemistry and Chemical Engineering, Dramatics, Engineering, Journalism, Nursing, Public School Teaching, Medicine, Secretarial Studies and Skilled Mechanical Trades.

The group conferences, which are conducted in two series of one hour each, are

preceded by a general meeting which is addressed by an experienced leader in education or business. These addresses have been delivered by such men as Carl Cohler, W. L. Batt, Glenn Gardner, Harvey Davis, and W. D. Fuller. Last year the program included for the first time a workshop conference which was designed to give popularized information concerning the techniques which should be used in choosing a vocation. There was a discussion of methods and procedures for determining aptitudes, skills and interest patterns as part of the process of choosing a vocation and setting up educational plans. No tests were administered, but advice was given concerning the usefulness of such examinations and where they could be obtained with expert advice. The response to this program was so great that the Committee plans to continue it this year with the possibility of offering through the Conference opportunity for individual examinations and conferences. Another feature of the program this year will be a Symposium for Parents, at which opportunity will be offered for a discussion of career problems with experts in the field. The Symposium will be conducted by Dean Max McConn, of New York University; Robert C. Burns, Co-editor of *Vocational Trends;* Roy B. Hackman, psychologist at Temple University; and Louis Q. Moss, of the Apprentice School at the Philadelphia Navy Yard. The exchange of ideas which should come through the discussion between parents and these leaders is expected to help the parent to co-ordinate his thinking with that of the child.

The success which this program has had during the last seven years has been reflected in the continuing interest among high school counselors as well as secondary school students. During this period a number of leaders from Philadelphia's educational and industrial institutions have made themselves invaluable to such a conference. In the development of the program the Committee has kept four basic principles in mind. These are: first, to provide through capable leaders adequate and accurate information concerning vocational fields; second, to inform interested secondary school students on these problems which are most perplexing to them as they go from the secondary school to college or apprenticeships; third, to stimulate critical and analytical thinking on the part of students about the social as well as the material values of a career; fourth, to help students to learn where information can be obtained and where training in the general and the highly-specialized fields is offered.

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# TRAINING FOR CONTINUING LEADERSHIP†

W. V. MERRIHUE

*Assistant to Manager, Publicity Department*
*General Electric Company*

IN a large organization it is highly important that there be some kind of system for training a continuous succession of young men to assume responsibilities for that organization's operation and management in the future. That the General Electric Company believes this to be true is evidenced by its training program for young men joining the G-E family.

*Mr. Merrihue*

This program dates from the time the Company was formed in 1892. The men who headed up the organization in those pioneer days had the vision and foresight to inaugurate such a program. Naturally, since then it has been enlarged and broadened to meet changing conditions. But the principle has always remained the same—to develop men by providing them with practical and productive employment, for which they are paid, by giving them the opportunity to assume responsibility, and by furnishing them practical classroom study designed to broaden their understanding of the electrical industry and of business in general.

The soundness of this principle is attested by the results attained down through the years. Perhaps its most important contribution has been the development of leaders throughout the whole Company. Many of the officers and executives in key positions of the organization today are graduates of this program. Some of the early graduates helped stimulate the growth of the electrical industry through their work in organizing and operating the early electric light and power companies and, as engineers of industrial plants, by finding new uses for electricity in industry.

Though there was a great need for training programs in the early days, such programs have become even more essential as General Electric has grown larger and its operations more complex. It would have been difficult and probably impossible, for the Company to expand into so many diverse fields had it not been for the fact that properly trained men were almost always available within the organization to take over responsibility.

Today, in all of the Company's operations, there are carefully selected men who are being prepared for the responsibilities of the future. Among them are engineers who are acquiring the knowledge needed to enable them to improve our products and processes, and those with natural inventive genius who are being guided as they pursue researches into new fields. There are future salesmen who are learning from experienced men the problems of selling electric equipment and developing better methods of distribution, craftsmen who are being trained to build and operate the complex machines that General Electric produces and uses, men who are learning the intricacies of mass production methods, and prospective managers who are serving an apprenticeship that

†This is the same title as the folder recently issued by the General Electric Company to stock-holders. Because of the timeliness and appropriateness of the article, we asked Mr. Merrihue to prepare a new version for publication in this issue of SCHOOL AND COLLEGE PLACEMENT. Additional emphasis has been given to the Business Training Course and the Student Engineering Courses.

will prepare them to cope with the problems of management.

### The Education Committee

Charged with the responsibility for the operation and development of this program is an Education Committee, which includes representatives of various departments of the Company. This committee establishes and administers the policies for the education program and follows the progress of the men from the time of their selection, through their training period, to the time of their assignment to a permanent position.

### Selecting the Men

It has been found that one of the most essential steps in such a program is the selection of the right men—men who have shown talent for leadership while at school, who rank high in character and scholarship, and who have the personality needed for successful employment in a large organization. Each year, a number of trained recruiters, aided by General Electric men who are alumni of the various schools, seek such men among the college and university seniors in different parts of the country. Professors at these institutions co-operate in the selection of recruits, for many of them know the type of men in which General Electric is interested.

No recruiting is done until after a careful forecast of personnel requirements has been made by all departments. When the number of men needed for the coming year is determined, plans are laid for the promotion of men already trained, and their replacement by men in training. With definite quotas established, it is possible for the recruiters to make their selections with careful consideration of the Company's requirements and the individual's best interests.

### Orientation

The objective of the first year of training is to give recruits an understanding of the General Electric organization and its general policies and objectives, and to provide an opportunity to try different kinds of work. Technically trained men obtain this experience from the Student Engineering, or "Test," Course. Graduates of business administration and liberal arts colleges take the Business Training, or "B.T.C." Course, and in this business program are also enrolled young men from high schools or business schools. Apprentices begin their training in the factory nearest their homes.

### The Business Training Course

The idea of the Business Training Course originated in 1919 in the Comptroller's Department as an effort to parallel existing Company training courses for engineers with an equally effective one for non-engineers. The main emphasis was naturally on accounting experience and training because the main objective was to develop accountants as leaders in the dollars-and-cents aspects of the Company's business. As time went on, the outlets for the group became somewhat more diverse and numerous graduates of this training program were placed in activities other than accounting, such as sales promotion, market research, publicity, and distribution. Because they themselves placed such a high value on their experience in accounting and because the department heads considered them more effective due to the insight into management which this interneship in accounting work gave them, the Company continues to insist that practically every Business Training Course man begin his career by getting some practical experience in productive accounting work.

This does not mean that a young man must have previous training in accounting to be eligible for employment. If he has studied accounting, he may be in a better position to determine whether or not he has

*Typical office where Business-Training-Course employees are assigned*

the aptitude for accounting work. If he has never studied accounting but is quite sure that he is interested in this approach to a business career, he will find all first assignments so elementary in nature that they can be easily mastered on the basis of a general education. The classwork program provides a theoretical instruction, beginning with fundamentals and progressing to the more advanced aspects of the subject as the trainee gains practical experience.

This program consists, first of all, of full-time clerical positions by means of which the men receive their practical experience. The classes include specific business subjects under the capable instruction of Company department heads and their assistants. The daily work consists of the usual office routine, such as recording, checking, compiling, auditing, and analyzing current transactions. The first assignments are extremely simple, but from time to time a student is moved to more important duties as he learns the procedure and as he makes the necessary favorable impression. For this work he receives a salary which will afford a comfortable living.

Those who have had little or no formal training in accounting and financial subjects begin their classwork with Elementary Accounting; whereas those who have majored in accounting in school take only the more advanced courses. This is done with a view to improving one's grasp of the relation between theory and practice. The length of the classwork program varies from two to three years, depending upon previous study. This does not mean, however, that business-administration graduates are constantly a step ahead of the liberal-arts men or of the engineers who elect to round out their training with this business experience.

No such differentiation exists in the practical work, inasmuch as a study of promotions made from both groups over a period of fifteen years shows that the liberal-arts men and engineers advance as rapidly as the business-administration graduates.

Because business success is largely dependent upon aptitude, it is important that every young man, and his employer as well, study constantly his orientation to his chosen career. This is done in the General Electric Company by close contact between the students and the Supervisor of Business Training, so that there may be a frank exchange of ideas in an effort to help a young man enter the particular field for which he appears best fitted after he has gone through a sufficient interneship. Work is being done with aptitude and other psychological tests in an effort to supplement the student's scholastic record and the constructive periodic job-performance ratings as a background for efficient counselling and guidance. The contact between the trainee and his instructors and his supervisors is also close, hence at the end of two years he is quite well acquainted with a group of leading men. All of this precludes "getting lost in the shuffle."

### Student Engineering Course

For many years it has been the practice of the General Electric Company to assign to the Testing Department the young men who came to the Company after their graduation from engineering colleges. Normally from 12 to 15 months are spent in this department, during which time the men are transferred from section to section in order to give them broad experience with a variety of apparatus to supplement their college training and also to give them the opportunity of becoming familiar with new equipment of the latest types.

While in the Testing Department, the engineering graduate is given the full responsibility of testing the apparatus produced by the factories, as it is necessary to assume responsibility in order to gain the maximum amount of experience. By taking charge of the work themselves, the young men in this group have the opportunity to use their initiative, to develop self-confidence, and learn to work with other people. They come in contact with many older engineers with whom they are able to discuss modern engineering practices. Production schedules must be met, and the Test men have their first introduction to schedules, costs, and other production problems.

The experience program is carried on at the factories in Schenectady, N. Y.; Pittsfield, Mass.; West Lynn, Mass.; Philadelphia, Pa.; Erie, Pa.; Fort Wayne, Ind.; Bridgeport, Conn.; and Bloomfield, N. J. Most of the Test men are assigned to more than one plant during the period of the Student Course in order to broaden their contacts with the Company and their knowledge of its products. On occasion, they may also be assigned to other sections of the Company.

Upon being assigned to one of the test sections, the Test man assists others in testing the equipment, and as he gains experience he assumes more responsibility until he is soon in charge of testing a piece of apparatus, with newer men acting as his assistants. These groups wire, adjust, and make tests on the special and standard equipment manufactured by the department in which they work. Time assignments in the the sections vary, but in general, average from two to three months, depending upon the type of equipment to be tested.

Some students are selected to take charge of complete sections, and many of the Testing Department foremen and their assistants are students who have been "signed up" under special arrangements to take added responsibility in testing work.

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### The Engineering Course

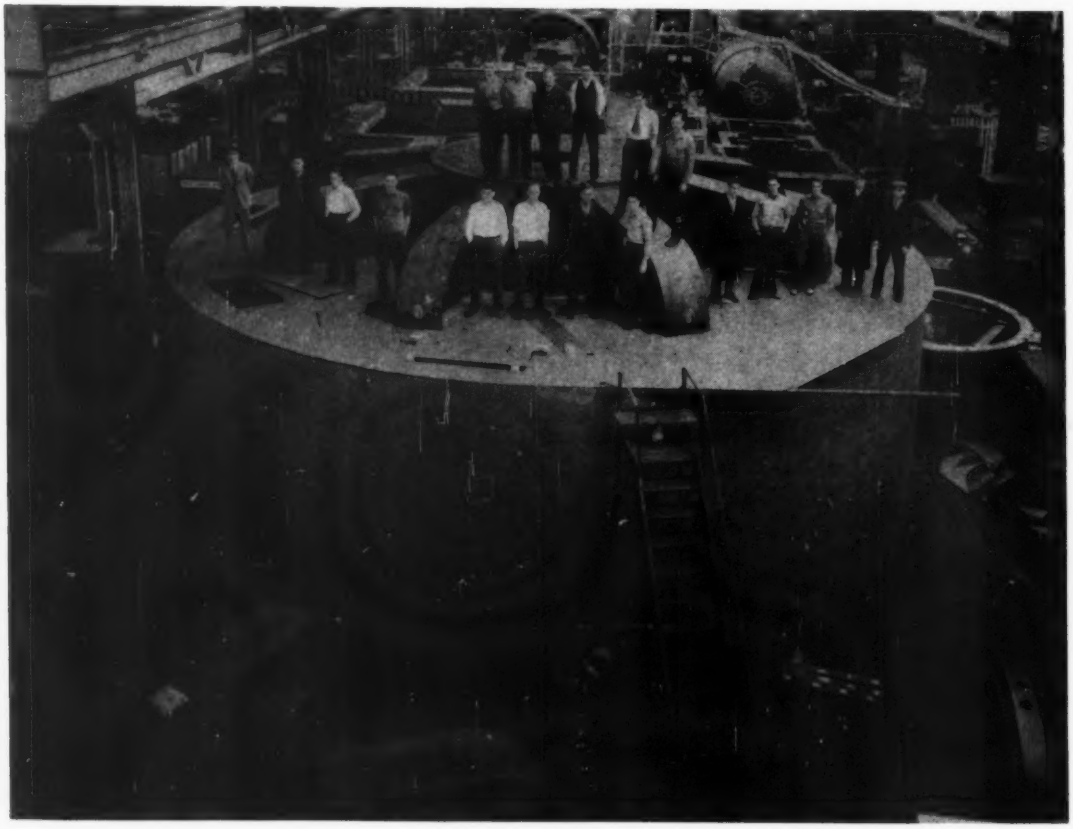
Each year a few men from Test are selected, because of their ability to analyze and solve difficult engineering problems, for membership in a three-year Advanced Engineering Course. They obtain experience in original analysis and in the solution of problems developed from certain engineering assumptions. Great stress is placed on analytical reasoning, which is essential to advanced engineering work.

Leading engineers of the Company discuss problems for which the students must present the solutions, and practical work is obtained not only in the engineering departments, but also in laboratories, shops and offices. There, they learn how to apply basic principles to the solution of engineering problems.

Some of these men, having found the type of work for which they seem best adapted, enter engineering departments before the conclusion of the course. Those who complete the course usually continue further study in that field of engineering for which they have shown the greatest aptitude.

### For Future Salesmen

Test men who have the attributes of salesmen and who desire apparatus sales work enter the Sales Engineering Course—a three-year course providing training in both engineering and commercial work. After their "Test" period, these men are assigned to engineering departments where they



*Student Engineers*

learn both engineering practice and the design features of General Electric apparatus. Later, in sales departments, they assist in the planning of sales campaigns, in the preparation of propositions, and in other commercial work.

While these men are obtaining the knowledge needed to sell technical products to industrial concerns, other young men from both Test and B. T. C. are following a similar procedure, training for sales work in the consumer goods and wiring fields. Their practical experience is also acquired by assignments to different departments where they learn the sales features of G-E products, and gain an understanding of the merchandising and distribution methods required in this work. Still others are trained in a similar manner for work in the lighting field.

The classwork for all the courses has been developed around the experiences of successful salesmen, and instruction is given in modern methods of salesmanship. The students are also taught the art of self-expression in writing and speaking, and they learn the fundamentals of market-research work.

After completing their course, the apparatus salesmen are usually transferred to district offices where eventually they come into contact with their assigned customers, or they may be located in one of the general office commercial departments. The consumer goods, wiring, and lighting salesmen are usually assigned to one of the respective department headquarters or sales districts, or are sometimes transferred to one of the distributing organizations.

### Training Engineers for Factory Work

As, on one hand, the problems of building electric equipment became more complex, and, on the other, the importance of mass production methods grew, there developed a growing need for men with engineering training in the manufacturing departments. Many years ago, the Company established a program of factory training for Test men whose interests and talents seemed suited to this work.

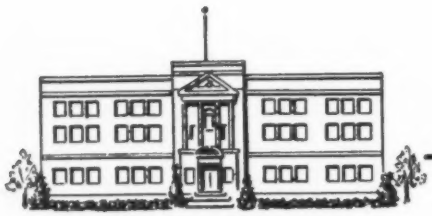
Essentially, the procedure in such cases is the same as that for the other courses. Practical experience is acquired through assignments to the different manufacturing departments—production, engineering and accounting. Classwork stresses such factory problems as personnel supervision, modern production methods, and cost control. Many such technically trained men, today, occupy important positions in the manufacturing departments.

Paralleling this endeavor has been a definite program of training for foremen. Personnel problems, better ways of performing certain operations, and general improvement in efficiency are attained through a planned series of meetings. Here, foremen have the opportunity to study the methods used by supervisors in other departments.

### Training for Business

The methods used to place the right man in the right job are not confined to the Company's technical courses; a similar procedure is followed in the case of students in the B. T. C. Emphasis on their training is in the acquisition of accounting and general business experience.

As in the other courses, experience is gained through frequent changes in assignments. Here, too, practical work is supplemented by a formal classwork program designed to provide a thorough grounding in the basic principles of business and a complete understanding of Company policies and background. Department heads and their assistants act as classroom instructors, so the class sessions tie in closely with the operations of General Electric and its affiliated companies. These contacts help the department heads better to appraise the



ENGINEERING COLLEGES

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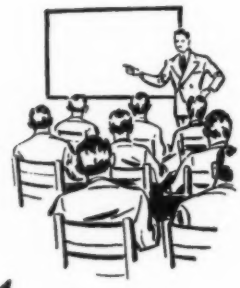
ARTS AND BUSINESS
ADMINISTRATION COLLEGES



"B.T.C."

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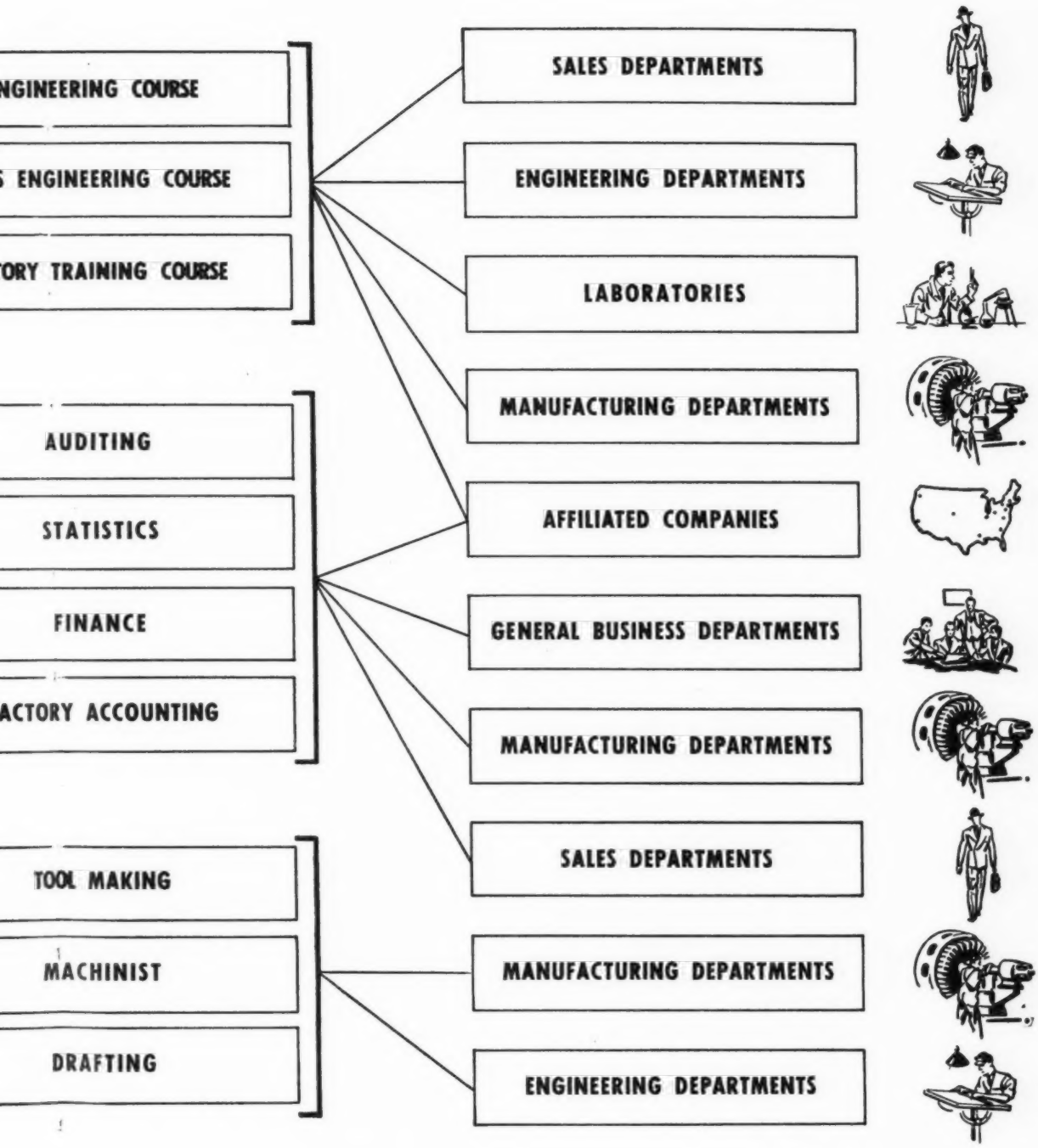
NGINEERING COURSE
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STATISTICS
FINANCE
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ENGINEERING DEPARTMENTS
LABORATORIES
MANUFACTURING DEPARTMENTS
AFFILIATED COMPANIES
GENERAL BUSINESS DEPARTMENTS
MANUFACTURING DEPARTMENTS
SALES DEPARTMENTS
MANUFACTURING DEPARTMENTS
ENGINEERING DEPARTMENTS

ability of the students and help the students to become better acquainted with their department leaders.

Some of the students eventually become traveling auditors; others, departmental or divisional auditors for the Company; and still others, staff members of the Accounting Department. Some take up similar work with affiliated companies, while some find that their interests are in work other than accounting and so engage in publicity, market research, distribution, and other diversified activities.

**A Proved Principle**

More than 20,000 individuals have graduated from Test. B. T. C., and the Apprentice Courses, and many of these graduates occupy responsible positions with General Electric and its affiliates. Others have risen to positions of importance in customers' organizations.

The fundamental principle of training men by paying them for doing productive work and supplementing this work with classroom studies has proved to be a sound and profitable one.

WE are a great people about in proportion to the number of us who live a full and rich life. Pittsburghers long ago created a University to help and to inspire young men and women toward such life; they created a chance here to study medicine, engineering, law, business, the profession of teaching, and other vocations.

*Write to the Registrar*

**UNIVERSITY OF PITTSBURGH**

# CREDENTIAL REQUIREMENTS OF SCHOOL ADMINISTRATORS

**What do employers of teachers look for in College Placement Bureau Recommendations?**

CHARLES A. FISHER

*Assistant Professor of Education and Director, Educational Placement Bureau, Temple University*

ON all school levels, in all teaching fields, the current demand is efficient teaching service. Those entrusted with the responsibility of employing teachers are fully conscious of this demand, and endeavor to supply it. But in spite of the well-intended efforts that may be advanced for this purpose, it frequently happens that a number of the teachers selected fail to measure up to the anticipations that were had for them at the time of employment. This is the problem of teacher selection.

*Dr. Fisher*

The prognosis of the teacher's ability is a rather intricate and fortuitous undertaking at best. Location of the individual with the proper qualifications, both as to kind and to the degree desired, for a particular position, demands the appraisal of many factors. In making the evaluation, the lurking danger of errors in judgment, whereby very capable teachers may be passed over or misfit teachers selected, is ever present. Employers realize this danger. Hence, as a precautionary measure, they seek, for their guidance in making the necessary decisions, information or opinions from disinterested persons who have some direct acquaintance with the applicant. Frequently, certain of this essential information is difficult to secure, or may not be available when needed. In such instances, the employers are obliged to risk their judgment and abide by the consequences. The urgent need for the discovery of the superior teaching talent available and for the reduction in the errors in selection, clearly indicates the need for assisting employers in their efforts to meet this problem.

For many years the colleges have endeavored to facilitate the employer's selection of teachers through the provision of information regarding candidates. But often such information is quite inadequate to provide for all the needs for authentic data which arise in the process of selection.

In order to aid employers of teachers, it has become the custom for college placement services to collect various kinds of significant data concerning each one of their registrants, to assemble this into a set of credentials, and then to submit these confidential papers for the employers examination when the teacher is recommended as a candidate for a position. Heretofore, however, there has been little if any significant study of the types of information employers need in this provision. Without such knowledge for guidance purposes, each institution has been obliged to determine by whatever criteria that seemed feasible the particular kinds of information it wished to furnish. It is obvious that this situation should result in wide differences in the material supplied by the respective

institutions, and that these efforts can only partially provide for the intended purpose that is supposed to be served thereby.

The Research Committee of the Pennsylvania Institutional Teacher Placement Association sensed this problem, yet realized that the promise of success in securing improvement seemed doubtful because of the controversial nature of much of the information used, as well as the tremendous difficulties otherwise involved. Nevertheless, the feeling prevailed that significant improvements would follow if the employers' reaction to the information supplied by the colleges could be secured, any additional information they might desire discovered, and these results made available for the college placement officers' guidance.

As a first step in this survey, a detailed study was made of the kinds of information now being furnished by the colleges in Pennsylvania, as revealed by the credential forms in use.[1] On the basis of this study, a rather elaborate questionnaire was prepared for the purpose of discovering the demand for such information as is being supplied, as well as for any additional kinds of information employers might desire. For various reasons it was deemed wise to solicit the employers' judgment of an item as *indispensable*, *desirable to have*, or *inconsequential* in teacher selection. The questionnaire was submitted to a selected and representative group of employers—public school administrators and directors—in sixty-two of the sixty-seven counties of the State. The items provided were classified under the four general heads (1) Personal Data, (2) Education and Certification Data, (3) Evidence of Teaching Success, and (4) Confidential Recommendations.[2] The results revealed are presented under these heads.

### Personal Data

The colleges have been supplying various kinds of personal data for many years. No doubt the changes in need arising from the modified placement situation have incurred changes in demand, for during the past decade an increase in requests for such information, and in the amount furnished, has been noted. Knowledge of the value of the traditional, and the new, items, as well as any additional types of information that may be desired and which can be furnished, will enable the colleges to adjust their provisions accordingly, thus facilitating the employer's problem as well as their own.

Results of the questionnaire reveal that the majority of employers consider the items under column A below as *very important* and *indispensable* in teacher selection, and those in column B as *important, desirable to have*, but not necessarily *indispensable*.

**A**

*Indispensable items*

Candidate's name
" home address
" age or date of birth
" race
" physical defects
" nationality
" marital status
" photograph
" teaching experience
" non-teaching experience
" musical ability:
  a. sing
  b. play piano
" extra curricular:
  a. interests
  b. achievements
  c. athletic ability

[1] Copies of this study can be obtained from Dr. L. H. Wagenhorst, State Teachers College, Slippery Rock, Pennsylvania.
[2] Copies of this study can be obtained from Dr. Charles A. Fisher, Director of the Educational Placement Bureau, Temple University, Philadelphia, Pennsylvania.

**B**

*Desirable items*

Candidate's home telephone number
" temporary address
" religious preference
" church membership
" college attendance record
" health record
" foreign residence
Foreign languages spoken or read
Business ability:
a. Typewriting
b. Bookkeeping
c. Shorthand—(Desired by only forty-six percent)

From ten to twenty-five percent expressed the desire for such additional information concerning the candidate as personal habits, father's occupation, family background, community interests, social interests, present contractural status, special abilities, membership in fraternities, lodges, professional organizations, and the like.

### Education and Certification

At the time of employment of teachers for the public schools, it is essential to determine the applicant's breadth of interest, degree of specialization, certification in the subjects to be taught, et cetera. Likewise, employers of teachers in other schools need to determine at this time the extent to which the applicant's training measures up to their standards. Satisfying these demands requires the presence of a certain amount of significant and reliable information concerning the teacher's education and certification. The need for, and the immediate interest in, such information is thus apparent.

From the reactions secured to the various items of information that are being provided, it would seem that this need is being supplied very satisfactorily. Employers were quite in agreement that the following items concerning college attendance are *indispensable* in teacher selection: dates of college attendance, dates degrees were granted, scholarships, fields of concentration and certification, additional training, and extension work. Thirty-four percent want the education courses listed and thirty-nine percent consider such listing as *very desirable*. They consider the high school attendance record and the date of graduation as *desirable* but not *indispensable*. Information concerning the elementary school attended is regarded as relatively unimportant or *inconsequential*.

Inasmuch as the practices followed in the presentation of the information concerning the fields of concentration and certification, and scholarship, vary among the colleges in the State, it was assumed the employers might find some one or possibly two of the methods used more practicable for their use than all others. Should this be the case, the colleges not using such preferred methods would be encouraged to adopt them. Accordingly, the attempt was made to discover the employers' preferences from among the methods used by the colleges for the presentation of these two kinds of information. But the results revealed by these efforts proved rather disappointing. The reaction to the methods used in presenting the fields of concentration and certification revealed that general statements, the presentation of semester hours in each field, a check list of college courses, and the transcript of record are of approximately equal popularity. In like manner, the opinion on the various methods of presenting scholarship indicates that general statements are only slightly less popular than the distribution of college grades, the rank in the college class, or the listing of intelligence quotient—which latter three are about equally acceptable. Ratings in the fields of concentration are only slightly more popular than this trio. Obviously, these results fail to evidence any significant preference in favor of any one of the methods used for either purpose. Since there is a wide

difference in the kind of information supplied by the various methods, there must be some real reason, not revealed in the judgments secured, for this decided lack of agreement.

### Evidence of Teaching Success

In the absence of accepted criteria for the prognosis of teaching success, employers must appraise the applicant's promise of success as a teacher from such indices as they may wish to use for the purpose. It is known that in current practice the kind and amount of evidence used, and the degree of significance attached thereto, vary tremendously among employers. Hence the discovery of the value of such evidence that is being supplied by the colleges, or any new evidence that the employers might want for this purpose, would enable the colleges to provide more of the specific kinds of evidence the employers desire.

The study reveals that majority opinion considers the supply of references (for the employers to contact), the practice teaching grade, and confidential statements (recommendations) by educators and others, as *indispensable* in employment. More than three-fourths consider honors received in high school or college, the candidate's statements about valuable experience, and a biographical sketch by the candidate, as *desirable information* to have. A small percent expressed the desire for information concerning the practice teaching assignment, conditions under which practice teaching was done, and the provision for opinions from former employers.

### Confidential Recommendations

The value that a confidential recommendation commands in the reader's judgment depends upon who wrote it, the form of its presentation, and the significance of the information that it contains. Any improvement in the value of the recommendations supplied by the colleges obviously will have to be effected along these three lines. Thus, the inquiry was conducted for the purpose of discovering the employer's preferences in these respects:

*Who should write the recommendation?*

Employers attach varying values to recommendations, depending upon the degree of confidence they may have in the writer. If the writer happens to be in a position to speak with authority about the applicant's ability, the recommendation will command more confidence than if his knowledge may be questionable. Candidates frequently fail to realize this fact in the provision of references; consequently, a certain number of recommendations supplied are prepared by writers that do not command the highest degree of favor with employers. Hence, it is the problem of the placement officer to discover the employer's preferences in this matter and to advise the candidates accordingly in the selection of references. In this way, recommendations can be obtained from persons most favored by employers.

On the basis of the opinions secured, employers prefer the recommendations prepared by the supervisor of practice teaching, the department head, or the student adviser in college. Those written by the college dean, other faculty members, the college president, and non-educators, while acceptable, are of decreasing value. In fact, the order of preference indicated is the order named, with a decided advantage in favor of the first three. For successful teaching experience, former principals or supervisors are desired. And, for character recommendations, doctors, lawyers, ministers and other professional men are acceptable.

*How should the recommendation be presented?*

On the basis of the personal reactions occasionally expressed concerning the form used in the presentation of recommenda-

tions, it is known that some employers are entirely satisfied with the writer's general impressions of the applicant; others desire some form of evaluation of a certain number of significant characteristics; still others seek more highly discriminating statements, which writers are not always justified in making. In their attempt to satisfy these varying demands, the colleges have evolved a variety of forms, classified according to types. These consist of general statements about the applicant, a check list of traits, a rating scale (check list of characteristics with letter or other values), or some combination of the three. Since there are considerable differences both in form and content, among the four types, it seemed that the employers might find some one or two types more useful than the others. If so, this knowledge would stimulate the wider use of the preferred type or types, with a resultant improvement in the form of presentation.

Surprisingly, the results reveal that administrators and directors disagree considerably in their evaluation of these types; yet when the data are combined they evidence comparatively little preference in favor of any one type. On the latter basis, the first three types are desired by approximately the same percent of the employers, and some combination of the three had a marginal advantage of less than five percent. While this very slight preference in favor of the fourth type may indicate a trend in the employer's opinion, it is obviously inadequate as a basis for any claim in favor of this type. It would seem, therefore, that all of these types are equally acceptable for purposes of presenting confidential recommendations. Since no new forms or changes in current forms were suggested in response to such solicitation, the employers are seemingly satisfied with the forms now used.

*What information should recommendations include?*

Studies of recommendations reveal that writers attempt to evaluate a certain number of general characteristics from among a large number that are used for this purpose. Presumably all are considered important, but no doubt some have greater significance than others. Discovery of those characteristics which employers would consider the most important to have at the time of employment would stimulate the more general provision of these, thereby improving the supply of this type of information. In order to secure the employers' opinions, the thirty-one most frequently used general characteristics were submitted for their evaluation.

According to the reactions noted, from two-thirds to seven-eighths of the employers consider judgments concerning the fourteen characteristics in column A below, and in the order named, as *very important* or *indispensable* in teacher selection; from seventy to ninety-six percent consider the seventeen items in column B as *important* and *desirable* to have:

A

*Very Important or Indispensable*

Personality
Character
General ability
Dependability
Teaching ability
Cooperation
Judgment
Promptness
Instructional skill
Discipline
Personal appearance
Physical fitness
Adaptability
Leadership

| B |
| --- |
| *Important or Desirable to have* |
| Diligence |
| Enthusiasm |
| Refinement |
| Mentality |
| Exactness |
| Self-possession |
| Forcefulness |
| Scholarship |
| Breadth of interest |
| Taste |
| Progressiveness |
| Consideration |
| Experience |
| General rating |
| Training and preparation |
| Personally recommended |
| Statements of prediction |

Inasmuch as a certain amount of data concerning mentality, breadth of interest, scholarship, experience, training and preparation are specifically provided for in the set of credentials, some employers may feel further treatment of these items in the recommendations unnecessary. Furthermore, since all of the thirty-one items submitted for their appraisal are considered as either indispensable or desirable to have in teacher selection, and since all of these items are rarely if ever covered in the set of recommendations supplied for some one applicant, it is apparent that employers feel the need for judgments concerning more of these characteristics than they are now receiving. Obviously the colleges can effect much improvement in the recommendations they supply by securing judgments concerning more of these characteristics—particularly for those that are considered *very important.*

While this study very evidently leaves much that one might desire to know about the employers' reaction to the colleges' efforts to assist them, it does reveal the kinds of information that the majority of employers believe to be absolutely necessary or indispensable in teacher employment, and such additional kinds of information as they consider sufficiently important or useful to make them *desirable to have.* This knowledge is significant and can serve a number of useful purposes leading to improvement in teacher placement. It will, at least, enable the colleges to adjust their supply of such information according to this objective evidence. Thus it will enable the colleges to improve the services which they render to employers, and to defend their offering. And as the specific kinds of information that employers desire are increasingly supplied, the difficulties encountered in teacher selection will be proportionately reduced. This study therefore should result in some measure of improvement of this challenging problem. Continued study and the discovery of new knowledge should ultimately lead to its solution.

# TRAINING FOR DEFENSE

### California Institute of Technology

AS part of the Engineering Defense Training Program sponsored by the U. S. Office of Education, the California Institute of Technology is offering six courses, to date. These are:

*Production Supervision*, which is under the general supervision of Robert D. Gray, Associate Professor of Economics and Industrial Relations, and Arthur H. Young, Visiting Lecturer in Industrial Relations. The subjects included are Industrial Organization and Scientific Management, Personnel and Industrial Relations, and Foreman Conferences and Training.

*Production Engineering* is under the same supervision as the above. Subjects included are Production Control, Time and Motion Study Cost Accounting, and Rate Setting.

*Radio and Electronics* (*Communications*) is under supervision of Dr. Royal W. Sorensen, Professor of Electrical Engineering. This course includes Vacuum Tubes, Gas Tubes and Photocells, Elementary Electronic Tubes, Amplifiers, etc., Transmitters and Antenna Design, Ultra-high Frequency Technique, Industrial Applications, and Radio Laws.

*Theory and Science of Electric Welding* is also under the direction of Dr. Sorensen. Arc Welding, Resistance Welding, Gas Welding, Metallurgy of Welds, and Testing and Inspection of Welds are subjects covered.

*Machine Design*, supervised by William Howard Clapp, Professor of Machine Design, includes Engineering Mechanics and Strength of Materials (review), Design of Machine Elements, Metallurgy and Shop Processes, Industrial Organization and Production Control, and Tool and Die Design.

*Tool Engineering*, also supervised by Professor Clapp, includes Cutting Tools, Design of Jigs, Fixtures and Dies, Part Analysis and Shop Layout, Gages and Measurement, Estimates of Labor and Materials, and Selection of Materials.

These courses are all given during the evening, and cover periods of from thirty to sixty weeks. Instructors have been selected from members of the California Institute staff and from men engaged in industry in the Los Angeles area.

Enrollment the first week in February was as follows: Production and Supervision, 84 men; Production Engineering, 87 men; Radio and Electronics, 39 men; Theory and Science of Electric Welding, 20 men; Machine Design, 42 men; and Tool Engineering, 39 men.

About March 24 instruction will begin in a course on Explosives, which will be under the general supervision of Dr. Linus Pauling, Chairman of the Division of Chemistry and Chemical Engineering, and Dr. William N. Lacy, Professor of Chemical Engineering. Authorization is pending for two additional courses, Physical Metallurgy for Engineers, and Naval Architecture.

William Huse, *Editor*,
*Institute Publications*,
*California Institute of Technology*

### Carnegie Institute of Technology

THE Carnegie Institute of Technology is one of ninety-two engineering schools in the United States which are participating in the Engineering Defense Training Courses. For purposes of supervision, the country was divided into twenty-two regions, Carnegie Tech being in Region 11, which includes six schools in Pennsylvania and West Virginia. This region made a survey to determine the occupational needs in the district to be served, the types of courses to be taught, and qualifications of those who should take them. As a result of certain publicity then released, over 18,000 persons applied for the courses in Region 11, of which approximately 2,500 were referred to Carnegie Institute of Technology. Applicants were considered regardless of sex, color or age, on the basis of their previous training and the usefulness of

the course to their future employability. Of the applicants considered, approximately 1,715 were actually registered for the courses now being given by Carnegie Institute of Technology in Pittsburgh or through Allegheny College, Meadville, Pennsylvania; Geneva College, Beaver Falls, Pennsylvania; Washington and Jefferson College, Washington, Pennsylvania; and Westminster College, New Wilmington, Pennsylvania. At present there are about 1,600 students still pursuing the studies, the 6% shrinkage having been caused mainly by the influenza epidemic in the district and by increased working hours, which have made it impossible for some of the students to carry an extra load.

Employers and employees have worked together in the effort to permit training outside of working hours, for the increased tempo of industry has called for more shifts and much overtime; it is necessary in many cases for the employers to arrange working hours suited to the school hours. Employers have felt well repaid, however, for the employees have shown remarkable interest in the work being offered by the engineering schools. After working all day in steel mills, in offices, or in machine shops, they faithfully report twice a week for evening classes of three of four hours' duration. For many the sacrifice is for all-day-Saturday classes rather than evening classes. In addition to the class work, the instructors expect four to six hours' home study a week from these men.

Carnegie Institute of Technology offers eleven different Engineering Defense Training Courses (see Figure 1). All of these have a prerequisite for admission of at least high school training, and some, such as testing and inspection, require one year's training in an engineering college. The supervisors for the courses are regular faculty members of the school, and while some of the instructors are present C. I. T. faculty men, many are men from industry who have agreed to give some of their time to teaching Engineering Defense courses.

As a part of the enrollment procedure in the Engineering Defense Training Courses, Carnegie Institute of Technology gave 1,078 students classification tests. The Carnegie Mental Ability Test was administered to all students. A number of other tests were administered to students in the various courses of study.

The Carnegie Mental Ability Test was given to all groups in order to compare them with one another and with the undergraduate students in the day courses of the College of Engineering. Unfortunately, no comparison with regular C. I. T. evening students can be made, since this group has never been tested.

The following general conclusions can be drawn:

1. The median score of EDTC students in all courses is 139 raw score points. This exceeds that of about 8% of engineering freshmen and of about 77% of high school seniors. In approximate terms, therefore, the upper half of EDTC students coincides with the range of ability represented among engineering freshmen. The high school comparison enables us to see that the upper half of EDTC students are drawn from the upper quarter of high school seniors. No seriously unfavorable conclusions should be drawn from the fact that the median EDTC student is inferior to the median engineering freshman. In view of the speed with which the EDTC students were selected and the absence of documentary evidence concerning the quality of their previous preparation, it is remarkable that they are as well qualified as test scores indicate. It is probably more significant that half of them lie among the upper quarter of high school seniors than that they fall somewhat below the very highly selected engineering under-graduates.

2. The most interesting characteristic of

## Engineering Defense Training Courses at CARNEGIE INSTITUTE OF TECHNOLOGY

| *Course title* | *Purpose* | *Subject matter* |
|---|---|---|
| *Elementary Industrial Chemistry* | To give the student a fundamental grasp of basic chemical concepts underlying industrial operation and laboratory control analysis. To prepare student to serve as relief analyst, or to advance routine analyst to more responsible work. | Introduction to college general chemistry, including laws of chemical change, chemical arithmetic, equation writing, elementary metallurgy, and industrial processes of manufacture of heavy chemicals such as sulfuric acid. Special emphasis on the chemical changes involved in the operation used in the industries in which students are employed. Laboratory work to include standard teaching experiments, as well as some introduction to qualitative analysis. |
| *Testing and Inspection* | To train inspectors of materials to extent that they will be competent to pass on conformity of materials with the specification requirements. | Tests, manufacture, general properties and uses of cast iron, wrought iron, steel, the non-ferrous metals, concrete, and timber. Course will serve all industries and government agencies using metals in fabrication of articles for defense, as well as those engaged in construction. |
| *Structural Drafting and Design* | To provide training in structural drafting and design. | Lectures and drawing room work. |
| *Production Engineering* | To familiarize student with the scope and broad relationships of industrial production; the principles involved; and the use of suitable and accepted techniques. | Problems of organization, control, plant location and equipment, materials handling, product and process planning, production control in various types of manufacturing, employee procurement, maintenance, and training. |
| *Production Supervision* | To familiarize student with principles, theory and application of motion and time study to industrial operations. | Motion study, micro-motion analysis, work simplification, economic lot size studies, and time study. |
| *Cost Control* | To teach cost accounting principles and applications. To prepare the student to serve as a cost accountant and to advance to more responsible work in accountancy. | General Ledger and Factory Cost Accounts. Factory practice with regard to method of handling records, and the collecting and recording of all necessary cost data. Wage payment plans, scientific distribution of manufacturing expense, planning, routing and controlling of production, cost reports for administrative officials, and graphic presentation of cost and production data. Standard costs and budgetary controls are studied, as well as cost accounting practices in merchandising, government units and financial institutions. |
| *Industrial Relations* | To give trainee a knowledge of the fundamentals of industrial relations; to enable him to familiarize himself with specific practices or policies employed by organization in which he is employed, in developing better employee-employer relationships. | Fundamentals of industrial relations, production management and personnel problems. Background and approach to study of industrial relations, sources of labor supply, job analysis, classification, selection, education and training, service rating, promotion and transfer, industrial health, morale and interest of the workers. |
| *Machine Design* | To provide training suitable for designers of ordnance and mechanized equipment, officers in charge of mechanized equipment, civilian engineers in Government service and in industry. "In-service" training for those engaged in manufacturing or production. | Lectures and laboratory on general rules on permissible stresses and deformations; stress concentration. Fastening devices; bolts, rivets, keys, pressing and shrinking, welding. Power transmitting devices: shafts, belts, gears, cams, clutches, couplings, screws, brakes. Machine frames and bedplates. |
| *Elementary Machine Design* | To provide training in fundamental principles of machine design for those who may not be directly engaged in drafting or in design of machinery. | Elementary mechanics; center of gravity, moment of inertia, simple stresses, combined stresses, stresses in bending; a study of machine elements such as threaded fasteners, keys, riveted and welded joints, springs, shafts, couplings, bearings, brakes, belt drives, cams and gears; general properties of materials. |
| *Elements of Metallurgical Engineering (Physical)* | To train men now employed in metallurgical plants for increased responsibility, better understanding of plant problems, and improved efficiency in their work. Also, to prepare unemployed men for work in metallurgical plants. | Study of physical and mechanical properties of metals and alloys; effect of working and heat treatment on these properties; pyrometry; constitution of alloys; elementary principles of refining and alloying operations; shaping and sizing of metallurgical products; elements of metallography; methods of testing metals. |
| *Engineering Drafting* | To give trainee sufficient knowledge and skill in the field of engineering drafting to take position as a beginning detail draftsman. Fundamental training in engineering drafting required for taking other courses in engineering design. | Grounding in descriptive geometry principles involved in general practice of engineering drafting. Use of drawing instruments, lettering, and methods of representation, including auxiliary views for showing inclined and oblique surfaces, sections, dimensioning, intersections, working drawings, details and assembly, and checking. |

FIGURE I

*MAN is not simply a flesh and blood dynamo, mass-produced, complete with spare parts. For us, each soul, each human person, is the term of a separate act of creation—new, unpredictable, not to be copied.*

ALLEGHENY COLLEGE
MEADVILLE PA
FOUNDED 1815

the EDTC students revealed by the classification tests is the extremely wide range of their abilities. The lowest score made by any student was 18 points, and the highest score was 282 points. Incidentally, both of these students were enrolled in the same subject, Testing and Inspection. Thirty-six of the EDTC students would have been in the "A" category (the top 10%) among engineering freshmen; 87 of the EDTC students scored lower than *any* engineering freshman in recent years. In general, the EDTC students are about 45% more variable in their abilities than are engineering freshmen.

3. The students enrolled in the various EDTC subjects occupy about the same range of ability, and the overlapping of scores from group to group is almost complete. There are, however, some significant average differences between the subject groups. In order of the median test scores of their students, the various subjects stand as follows:

| Subject | Median Score |
|---|---|
| Production Engineering | 177 |
| Machine Design | 154 |
| Testing and Inspection | 148 |
| Production Supervision | 145 |
| Elements of Metallurgical Engineering (Physical) | 138 |
| Structural Drafting and Design | 135 |
| Engineering Drafting | 132 |
| Elementary Machine Design | 129 |

It must be emphasized that these differences pertain to the averages of the groups, and that the overlapping of the abilities is very great. For example, 19% of students in Production Engineering, the highest group, fall below the median student in Elementary Machine Design, the lowest group. Conversely, 10% of the students in Elementary Machine Design, the lowest group, are better than the median student in Production Engineering, the highest group.

Although the courses at Carnegie Institute of Technology are especially designed to train men already employed, they also include some unemployed men, who it is believed will supplant in the lower positions those men who are advanced because of their previous experience and new training.

The manufacturing industries of the district were the principal source of applications for the Defense Courses. Of the applications received approximately 27% came from the steel industry, 9% from electrical apparatus and allied concerns, and 16% from miscellaneous manufacturing companies—totaling over 50% of the gross applications received. Of particular interest from the standpoint of engineering labor supply is the fact that about 22% of the men who applied were either unemployed, were employed in W. P. A. and related programs or were engaged in retail and miscellaneous non-manufacturing trades. Although it is evident that the majority of applications were received from industries and com-

panies already engaged in production for defense, and therefore would not appear on the surface to add to the reservoir of engineering help available, a review of the individual applications reveals that the occupations of many men in this group are in the unskilled or semi-skilled group—places which can be filled more readily when the present incumbents are moved into engineering positions.

Some doubt has arisen in the minds of a few people as to whether the short intensive courses under way can satisfactorily fill the needs of industry. Because the courses are of college level, however, and because they were designed to satisfy the greatest present needs of industry as suggested by the companies themselves, because the instructors are taken from industry, and because of the eagerness of the employees to advance by further training, we feel convinced that the Engineering Defense Training Courses are an important advance in the larger Defense Program of the United States.

Charles B. Stanton, *Administrator, Engineering Defense Training Courses, Carnegie Institute of Technology.*

### Case School of Applied Science

THE original plan of the Engineering Defense Training Program called for full-time day courses of college grade of approximately one semester. Its objective was the training of young men with two or three years of college training, who, for some reason had been unable to complete required work for their degrees. These full-time day courses, in addition to permitting further training, would concentrate reserve man power at focal points from which placement in industry could more readily be accomplished.

**CASE SCHOOL OF APPLIED SCIENCE**
**ENGINEERING DEFENSE TRAINING PROGRAM**

**Evening Courses on Campus**

| Course | Applications Received | Applications Accepted |
|---|---|---|
| Explosives | 93 | 60 |
| Industrial Instrumentation | 84 | 70* |
| Motion Economy | 120 | 36 |
| Machine Detailing | 170 | 40 |
| Electrical Maintenance and Control | 329 | 75 |
| Internal Combustion Engine Testing | 161 | 45 |
| Fundamentals of Machine Design | 240 | 41 |
| Welding Laboratory | 17 | 17 |

*40 *of these may take laboratory*

**Day Course on Campus**
(30 hours per week)

| | | |
|---|---|---|
| Course for Inspectors, Metallurgical Laboratory Technicians and Heat Treaters | 100 | 35 |

**Evening Courses off Campus**

| | | |
|---|---|---|
| Engineering Surveying** | 151 | 151 |
| Engineering Drawing with Mathematics | 525 | 35 |
| Fundamentals of Machine Design | | 35 |
| Materials Inspection for Steel Industry | | 35 |
| Production Supervision | | 35 |
| TOTAL | 1,973 | 710 |

***Ravenna Arsenal*

FIGURE II

The urban colleges, such as Case School of Applied Science, had an entirely different problem. Pre-employment courses for men having two or three years technical training were not necessary. The men were already employed. Consequently, the problem resolved itself into one of "in-service" training. These conditions made it necessary for some revision of plans in Washington with the recognition of training needs within highly industrialized communities.

In common with other technical colleges in centers of industry, Case School of Applied Science had a full-fledged Evening Division with approximately eight hundred students enrolled. Added to the night load was the largest registration of full-time day school students in the history of Case, a total of approximately nine hundred and fifty. With plant and staff facilities near peak of use, the Engineering Defense Training Program was initiated.

After a survey was made of companies in the Cleveland area to determine the future employment bottlenecks in the technical and semi-technical fields, a group of courses was planned and submitted to the U. S. Office of Education for approval. Authorization was received for the following part-time evening courses: Electrical Maintenance and Control, Explosives, Industrial Instrumentation, Machine Detailing, Fundamentals of Machine Design, Elements of Motion Economy, Internal Combustion Engine Testing, and Welding Laboratory. In addition to these, a full day-time program of thirty hours per week was authorized for Inspectors, Metallurgical Laboratory Technicians and Heat Treaters.

Before the work could be started additional needs for engineering defense training were discovered in the Northern Ohio area, indicating a need for extension work. At the Ravenna Arsenal Project a course in Engineering Surveying was started. For the Youngstown, Warren, Sharon area four courses were proposed that were to be given at Youngstown College under the supervision of Case School. Requests from smaller industrial areas both east and west of Cleveland have been received, and efforts are being made to give service where needed.

The response of industry has been wholehearted. In every way complete cooperation has been had. The general public grasps eagerly at the opportunity for additional education and training. The evidence is to be found in Figure II. All courses were oversubscribed by varying ratios, the maximum being six to one.

Qualifications for admission varied from the base of a high school diploma or its equivalent up to three years of college training. The course in Explosives demands a full year of organic chemistry, which resulted in that class being filled, to a high degree, with men holding bachelor's and master's degrees. Men made application for the courses and selections were made from the application forms, with regard to proper preparation for the work, and acceptance of enrollees was spread over the companies with defense contracts.

Further needs for Engineering Defense Training are indicated as being critical in the explosives industry and the ship-building industry especially. In addition, the drafting of men for military service will be a factor undoubtedly in the future training requirements of the industries in Cleveland. Whatever the need may be, Case School of Applied Science will service the Northern Ohio area within the limits of its capacity.

C. A. McKeeman,
*Coordinator of Defense Training,*
*Case School of Applied Science*

### Drexel Institute of Technology

SHORT, intensive Engineering Defense Training Courses are offered by Drexel Institute of Technology under the Defense Training Program financed by Congress and

# SPARK PLUG OF *Progress!*

IN A dim-lit laboratory, amid a maze of apparatus and a mass of figures, a lone individual labors on into the night. Time has ceased to exist, for his is a labor of absorbing interest—the development of an idea—a "spark"—which, when perfected through his own initiative, will be given to the world to assist its progress.

That's the American way... progress through the "spark plug" of personal initiative.

So it is with U. G. I. Fifty-nine years ago a group of individuals, with foresight and initiative, and unfettered with restricted horizons, brought U. G. I. into existence. Since then, an almost continuous stream of "ideas" has been born, reared and perfected through unceasing study and research by individuals within the company. . . . And passed on unselfishly for the benefit of millions upon millions of users of gas and electricity.

In the future, as in the past, opportunity for the development of individual initiative must be preserved if progress is to continue.

**The United Gas Improvement Co.**
**1882-1941**

UGI

directed by the United States Office of Education. The courses, six months in length, with all the work on college level, cover a number of fields of special emphasis on which a minimum of nine weeks of class time is spent.

Prerequisite for enrollment in a Defense Training Course is graduation from an academic course in an approved high school. Further technical training and some industrial experience is desirable. Applications are received by the Committee on Defense Training Courses at the College, or are referred in groups by employers.

Classes meet for six hours a week, usually two evening sessions of three hours each, or all day Saturday. About four hours per week of home study are required. A number of the classes are held at the College on Saturdays, others in high school buildings, and, wherever possible, in classrooms and laboratories made available by the industrial plants.

The teaching staff includes men from the Drexel day and evening faculties, and qualified men actively employed in industry.

Courses now in progress at Drexel Institute of Technology are *Chemical Plant Operation*, which deals with chemical theory and calculations, supervision and operation; *Electric Circuit Theory, Machines and Instruments*, designed for those employed in jobs requiring knowledge of electric circuits and diagrams, machine operation, switchboard design, uses of instruments, etc.; *Marine Electrical Engineering*, of value to those engaged in the electrical field as it touches upon ship construction; *Design of Hull Structures*, for those directly connected with the shipbuilding industry in departments where a knowledge of the design of hull and structures is desirable or essential; *Machine Design*, for draftsmen, designers, computers, and others interested in the design of machinery or machine parts; and *Production and Tool Engineering*, of value to those engaged in some phase of production. Minor executives, planners, time study or methods men, production foremen, and inspectors will find this course of value in increasing their knowledge of many phases of production and tool work.

Drexel Institute of Technology assumes no responsibility for the placement of those who have completed these courses. In many cases, of course, the students are already employed in defense industries, and are seeking the additional training in order to become more valuable employees. Those students wishing to be placed in positions where they may better use their newly acquired training

*Professor Stevens*

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are referred to the State Employment Office and the Civil Service Bureau.

W. J. Stevens, *Chairman*,
*Committee on Engineering Defense Training Courses*,
*Drexel Institute of Technology*.

### Georgia School of Technology

IMMEDIATELY upon the first functioning of the Number One program of national defense vocational education courses, the Georgia State Board for Vocational Education, President M. L. Brittain, Dean W. V. Skiles, and Professor R. S. King, Head of the Department of Mechanical Engineering of Georgia School of Technology, arranged for the conducting of W. P. A. pre-employment "refresher" national defense vocational education classes. Additional call faculty members were employed. The success of these classes, as of all classes, is due largely to the deep interest which each faculty member, call and regular, took in these pupils. Of these trainees, twenty have been placed in private industry.

After the fall term started, Georgia Tech put increasing emphasis on vocational defense courses supplementary to the daily work of men already employed in defense-essential occupations. The supervision of the whole program was put in the hands of Professor R. S. Howell, Director of the Evening School of Applied Science, with consequent increase and improvement of classes. The Electrical and Machine Design Departments of the college also offered courses.

In January the engineering defense courses got under way with the additional help of Professor J. E. McDaniel, Head of the Cooperative Plan, and regional representative of the Advisory Committee to the Commission of National Defense. These courses are also under the supervision of the Evening School of Applied Science.

During the day-time the following pre-employment vocational courses, on the sub-collegiate level, are offered: General Foundry (16 men), Advanced Machine Shop (4 men), Pattern Making (14 men), Welding, all positions (30 men). Vocational courses offered at night include Electric Welding (30 men), Gas Welding (15 men), Machine Shop (32 men), Dark Room Technician (12 men), Radio Engineering—two sections (40 men), Radio Service (15 men), Heat Treating (6 men) and Drafting (20 men). More than 150 applicants for the courses in welding could not be accommodated.

All of the following collegiate engineering defense courses have been approved, and some are already in operation: Textile Testing, Metal Inspection, Construction Materials and Engineering Drawing. Other courses which are being considered, or have been applied for include Textile Production Supervision, Production Supervision, Production Engineering and Pyrometry.

Thomas H. Quigley,
*Industrial Education Department*,
*Georgia School of Technology*

### Pennsylvania State College†

MANY inquiries have come from industry in regard to the recent federal appropriation of $9,000,000 to finance intensive defense training programs in higher education in engineering and mineral industries schools under the provisions of the National Emergency Training Act. This appropriation should not be confused with the appropriation of $45,000,000 authorized by Congress for general vocational education. Both appropriations are administered by the U. S. Office of Education, Federal Security Agency, Washington.

The former appropriation is an offensive operation predicated on certain needs for intensive training of new employees who

† Reprinted by permission from "Mineral Industries," January, 1941

will be required in the expanding defense industries. A special admonition of the U. S. Office of Education has been issued against disturbing existing educational programs with the specific instruction that the emergency training shall be given in the form of training rather than of education.

A preliminary survey indicates that the industries in Pennsylvania anticipate the need of 1,645 specialized mineral technicians in 27 centers. The training of these men has fallen largely on the organization and staff of the Extension Division of the School of Mineral Industries of the Pennsylvania State College. Survey of the field, organization of classes, etc., will be carried on by the central extension office of the College. The mineral technology courses required are physical metallurgy, physical testing, pyrometry, petroleum refinery control, fuel technology and meteorology. General qualifications for admittance to the courses consist of two or more years of college work in a technical curriculum or its equivalent. No charge is made for tuition, fees, supplies or materials. Applicants should not assume that they will be absorbed immediately by industry on completing a given course. Tentative budgets for the work were approved by the U. S. Office of Education on November 30. Classes were begun in January, and the work will be completed about June 30.

In addition to the extension program, the School of Mineral Industries has offered to give special defense courses on the campus in production metallurgy or iron and steel, metallurgical inspection, physical metallurgy, intensive course in meteorology, and meteorology for artillery officers and ob-

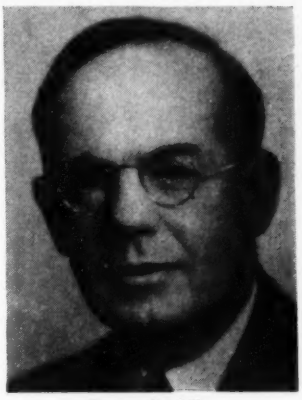
*Fuel Testing and Gas Analysis at the Pennsylvania State College*

servers. Whether these courses will be given will depend on the demand, which in turn depends largely upon whether special groups will be sent to the College by the Army, Navy and other service groups or industry for training of this character. The School of Mineral Industries will give a minor in engineering metallurgy in connection with a Navy course in diesel engines sponsored by the School of Engineering.

A certain hysteria is apparent in the type, quality and quantity of defense training to be given under the Act. The College must remain stable, comply with all of the provisions of the program, and at the same time offer its every facility for special defense training wherever the actual needs for such training exist. The industries cooperating in the regular extension programs of the School, part-time teachers, and students should not confuse the two types of training. Mineral industries extension instruction has been given for many years in class centers throughout the State of Pennsylvania. This instruction anticipated the needs for pre-employment and in-service training such as the National Emergency Defense Training program proposes to promulgate in a more intensive and, therefore, necessarily less thorough manner.

It is the feeling of those in authority that men now enrolled in regular extension class training programs should not abandon these programs for enrollment in the specialized classes. On the other hand, some cases may arise in regular class centers for training of a different nature or of a more specific type, and advice on these courses will be given to part-time teachers and the students concerned. Present enrollment figures in Mineral Industries Extension courses of the School show that 4,392 men are enrolled in 188 classes in 106 centers in 49 counties; the instruction is given by 166 part-time teachers.

The College will meet requests for training under the National Defense Training Act to the best of its ability. It should be noted in the emergency training that the required number of qualified teachers will be difficult to obtain, laboratory facilities are at a premium, and that in the final analysis, a tremendous amount of money will be expended for a program which has neither the stability nor the thoroughness of the regular educational programs of the College now in force both off and on the campus.



*Dean Steidle*

Edward Steidle, *Dean,*
*School of Mineral Industries,*
*The Pennsylvania State College.*

### University of Notre Dame

PURDUE University, Rose Polytechnic Institute, and the University of Notre Dame have been charged with the responsibility of providing courses in the Engineering Defense Training Program in the state of Indiana. Rose Polytechnic Institute is taking care of the southwestern area of the state except Evansville. The University of Notre Dame has the central northern industrial region including the cities of LaPorte, South Bend, Mishawaka, Plymouth, Elkhart and Goshen, and also Niles and Buchanan, Michigan, which latter are close to South Bend and actually are in the same industrial region. Purdue University, through its extension division, is offering courses in the remainder of the state except in New Albany and Jeffersonville, which come under the University of Louisville. Purdue and Rose

are cooperating in the offering of courses in Indianapolis.

The University of Notre Dame is giving four courses in the evenings on the campus. These courses and their respective enrollments are Physical Metallurgy (65 men), Chemical Analysis of Metallurgical Materials (25 men), Production Engineering (90 men), and Tool and Die Design (75 men).

Seven members of the faculty of the College of Engineering and five engineers from industries in the region are acting as instructors. The students are drawn from some 35 to 40 companies. The first course named is being handled by lecture and demonstration. The second (Chemical Analysis of Metallurgical Materials) is almost entirely laboratory work. The instruction of Production Engineering, and Tool and Die Design, is a combination of lectures, class discussion, and visual education by moving pictures.

Before establishing the Engineering Defense Training work at Notre Dame, a number of conferences were held with groups of leading representatives from the industries in the several cities. Through these conferences the most serious deficiencies of technically trained men existing in the industries of the region were determined, and tentative outlines of proposed courses that would aid in overcoming these deficiencies were prepared by members of the Notre Dame engineering faculty. These outlines were thoroughly discussed and revised in conferences with industrial representatives, and it was then decided to limit the offerings to the four courses named. Information was then prepared with regard to the whole program and the particular courses to be offered, and this was disseminated through the Chambers of Commerce in the several cities to all the industries in the region. The industries in turn informed their technical employees who might be interested and qualified to take the courses. In transmitting the applications of their employees to the University, each company recommended to the University those employees who would bring greatest benefit to the company by taking the course requested. This method gave good assurance of having enrolled in the courses those engineers whose further technical training would be of greatest service to the National Defense effort in the region. All applications gave the education and experience of the applicant. The University made final selection of the students, basing its decision both upon the information provided by the applicants and upon the recommendations of the company.

When the University made its preliminary proposals for the four courses to the U. S. Office of Education, it had quite complete information upon the prospective number of students, and it had partially completed its organization of the courses. Therefore it was able to initiate all four courses, with maximum registration in each subject, less than a week after receipt from the Office of Education of approval of the courses. All of the courses have been in operation since the third week in December without loss of students. There is intense interest in the Engineering Defense Training Program in this region as evidenced by the more than 350 applications received, whereas the University could handle only about 250 students in the courses. It is apparent that at least 90% of the students registered in the four subjects will carry through to the end of the courses. All of these students are employed by industries in fields related to the subjects which they are pursuing in the Engineering Defense Training Program.

In addition to the four courses now being offered, courses in Safety Engineering and in the construction field are being seriously considered for the present year. If the program is continued, it is probable that courses will be offered next year in the fields of Metallurgy, Production Engineering, and Tool and Die Design—repeating the subjects being given at present and, if possible, offering additional subjects as outgrowths of the present courses and also in several other fields, such as Engineering Drawing, for which there is need in the industries of this region. There is so much need and demand from the industries in this region for such courses that it is evident that it would be desirable not merely to continue the program next year, but to expand it.

*Dean Jackson*

D. C. Jackson, Jr., *Dean,*
*College of Engineering,*
*University of Notre Dame*

**Washington, Oregon, Idaho, Montana**

REGION 22, of the Engineering Defense Training Program, encompassing the States of Washington, Oregon, Idaho and Montana, has been canvassed for trainees with required prerequisites for the courses to be offered. Plans included a class in Aerodynamics at Oregon State College, a class in Design Drafting at the University of Idaho, a class in Engineering Drawing both at Washington State College and Montana State College, a class in Explosives at Montana School of Mines, and a class in Welding Inspection at the State College of Washington. At the time of writing it seems that the class in Explosives and the class in Mechanical Drawing at Montana School of Mines will not mature. The class in Design Drafting at the University of Idaho is problematical because of the lack of trainees with the required prerequisite of junior standing in Engineering college work.

The State College of Washington is in the "hinterland," so to speak, being three hundred and fifty miles from the Seattle-Tacoma Area where there have been granted defense contracts totalling approximately $1,000,000,000. Consequently, because the College is located in a small town eighty miles from the city of Spokane, and obviously out of the Seattle-Tacoma Area, no "in-service" training is offered on the Campus.

The program at the University of Washington is progressing on the "in-service" phase. Some four hundred students are enrolled in twenty-three or twenty-four different subjects. Plans are still being formulated for "in-service" courses for Civil Service employees for the Bonneville Administration in Portland, Oregon.

Howard H. Langdon, *Regional Adviser,*
*Engineering Defense Training Program,*
*Pullman, Washington.*

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Howard H. Langdon, *Regional Adviser,*
*Engineering Defense Training Program,*
*Pullman, Washington.*

## PRESIDENT'S STATEMENT

**Notable progress being made by the Committees on Institutional and Regular Membership, and Contributing and Sustaining Membership.**

WHEN the Pennsylvania Association of School and College Placement was established by Dr. Thomas S. Gates, President of the University of Pennsylvania, on July 1, 1940, as an independent organization of personnel, guidance and placement workers, in schools, colleges, firms and state and federal employment services, the Association's Executive Board was faced with the comprehensive problem of developing quickly the necessary financial resources to make the entire program possible.

Since the program included the publication of a quarterly journal and the staffing of an Executive Office, the requirements of the budget will be apparent both in extent and importance. In fact, it may be stated positively that without the most careful planning, at the very outset, of a sound fiscal policy, the entire movement would have been jeopardized or even rendered impossible of fulfillment.

For this reason, the Administrative Committee, which was designated by the Executive Board to assume the responsibility of detailed planning and procedures, has devoted its most careful attention to ways and means for the assurance of a balance between receipts and expenditures during this first critical year in the Association's history. These efforts have included the creation of one committee on Institutional and Regular Membership, and a second committee on Contributing and Sustaining Membership.

The first of these two committees has had the great advantage of sponsorship by President Gates of the University of Pennsylvania as its Honorary Chairman, and by President Horace P. Liversidge of the Philadelphia Electric Company as its Honorary Vice-Chairman. Through the untiring support of Mr. John Barr of Temple University as General Chairman, and the added assistance of four Vice-Chairmen, namely Mr. F. R. Morey of the Swarthmore Public School System, Professor Fred W. Slantz of Lafayette College, Mr. Dale Purves of the John B. Stetson Company and Dr. John Robbins Hart of the Valley Forge Memorial Chapel, a comprehensive membership campaign is now about to be launched on a national basis.

The second of the committees has been sponsored by President John A. Stevenson of the Penn Mutual Life Insurance Company who is Honorary Chairman, and by Chancellor John G. Bowman of the University of Pittsburgh, who is Honorary Vice-Chairman. Mr. A. M. Boyd of the Philadelphia Electric Company, as General Chairman, has devoted his time unsparingly to this part of the financial program, supported by three Vice-Chairmen, namely Mr. H. W. Jones of the Atlantic Refining Company, Mr. Gordon A. Hardwick of the Penn Mutual Life Insurance Company, and Mr. A. B. Millar of the Pennsylvania Electric Association.

The results of the work of this second committee will be quite apparent from the fact that Contributing and Sustaining Membership through advertising in the journal has reached a point in the present number, far in advance of preceding issues of the journal. In addition, progress has also been made in obtaining Sustaining

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INSTITUTIONS
SCHOOLS & COLLEGE BUILDINGS
OFFICE & BANK BUILDINGS
HOTELS APARTMENTS HOSPITALS

Members through direct cash grants to the Treasurer of the Association. However, the goal set by the Administrative Committee has not yet been attained, and hence to widen the efforts of his committee Mr. Boyd has now set up a Sub-Committee on Advertising under the leadership of Mr. O. C. Roff of the General Electric Company as General Chairman, and with sixteen members from a wide variety of professional fields.

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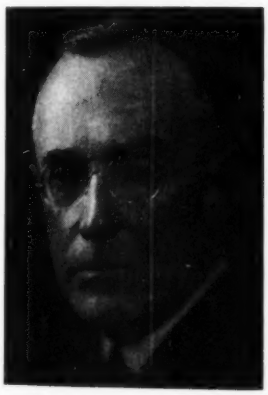
### College of Chestnut Hill

Since 1935 the College of Chestnut Hill has been making annual occupational surveys of its alumnae. The 1940 investigation has resulted in a 79% return of information. The Class of 1938 made a 100% return, a phenomenon that occurred, probably, because of the special study made of this group.

The Class of 1939 reported that 37% of the members had taken or were undertaking additional studies, of a professional or advanced nature; 75% were employed in a variety of occupations including Secretarial Service, Teaching, Social Service, Home Economics, Merchandising, and Service representation. Of this group, libraries and science laboratories claimed 5% each. Of 139 young women holding teacher certificates, 29% were teaching, 48% were in other occupations, 6% were unemployed, and 17% were married and not in positions.

### Curtis Publishing Company



*Mr. Fuller*

Mr. Walter D. Fuller, President of the Curtis Publishing Company, has been elected president of the National Association of Manufacturers, to succeed Mr. H. W. Prentis, Jr., President of the Armstrong Cork Company. Both Mr. Fuller and Mr. Prentis were active in the Job Mobilization Program sponsored by Governor James of Pennsylvania, last winter. Mr. Fuller was Chairman of the Job Mobilization Program, and Mr. Prentis was a member of the Committee on Educational Cooperation, on whose action the Pennsylvania Association of School and College Placement was established on July 1, 1940.

### Drexel Institute of Technology

Dr. John B. Baker, Assistant Professor of Mechanical Engineering at Drexel Institute for the past six years, has been granted a year's leave of absence to become instructor for the Engineer Organized Reserves.

Dr. Baker, a Major in the Engineer Reserves, will be located at the Headquarters of the First Military Area, Customs House, Philadelphia, where he will be in charge of the training, assignments, transfer and procurement of engineer reserve officers.

The fiftieth anniversary of the founding of Drexel Institute of Technology will be observed during the academic year 1941-1942. The committee which will direct the celebration is comprised of A. J. Drexel Paul, President of the Board of Trustees and a grandson of Anthony J. Drexel, the Founder; C. H. Krumbharr, Jr., Vice President of the Board of Trustees; Dr. Parke R. Kolbe, President of the college; Charles Warner, representing the alumni; Dr. L. D. Stratton, representing the faculty; and Director Willis T. Spivey, of the evening session.

### Los Angeles City College

The Placement Office of Los Angeles City College recently issued a survey of graduates of the last decade. The results, according to Miss Victoria McAlmon, Placement Coordinator of the College, have been helpful in directing the Vocational Guidance Program.

Of the 4,187 graduates of the College since June, 1931, some 759, or a little better than 18%, responded to the questionnaire on which the survey was based. The report lists the firms for which the 759 graduates

are working, the top and median salary reported by each group of graduates (according to the department from which they were graduated), and the type of work being done by each. The study would have held more interest, and possibly more value, for the general reader had the length of time out of school, the sex of the worker, and the degree or certificate held, been indicated.

### Pennsylvania School for the Deaf

During the month of January, 1941, some thirty-three former students of the Pennsylvania School for the Deaf, at Mt. Airy, Philadelphia, found positions either through their own initiative or with the help of the School's Placement Bureau. Those remaining unemployed, according to Mr. M. Wistar Wood, Superintendent, are now largely unskilled workers, qualified only for very simple positions of a routine nature.

### Swarthmore School District

At a meeting of the College Guidance Committee of the Home and School Association of Swarthmore, on January tenth, a definite proposal was formulated relating to College Guidance. It was suggested that there be assembled: a file of college catalogues; a card file, to be kept at the High School, of alumni of various colleges who are resident in the district, and who can talk with prospective students of their colleges; a file, arranged according to professions, of available consultants; and a bibliography of material which would aid in the selection of a college. Recommended was the inclusion in school records of parents' and students' college hopes and desirabilities as revealed through questionnaires.

The Committee also suggested that the program be widened to include career and vocational guidance, and poised the question "Should we take upon ourselves this added task?" with the implication that such further probing of the subject be turned over to a specific, qualified Committee.

### University of Texas

In his 1939-40 Annual Report of the Assistant Dean of Men and Director of Student Employment, Mr. Arno Nowotny of the University of Texas lists 1,850 applications for Student Aid, and a total of 1,739 jobs secured for these applicants. The total student earnings were $57,354.54.

Three hundred and fourteen University of Texas students held permanent positions (lasting more than one month but not over one year) during the college year just passed, and earned $51,065.25. Corresponding figures for the previous year, 1938-39, were 288 students employed, and $35,516.48 earned by them.

During 1939-40, some 1,398 students held temporary jobs (less than one month) and earned, during the year, $6,289.29. Although the number who worked in 1939-40 was not considerably larger than the comparable group in 1938-39 (1,256) their earnings were nearly double those of the earlier group ($3,690.15 in 1938-39).

The Graduate Placement Division, recently organized, reported 403 applicants for positions, and 16 jobs secured, at an average annual salary of $1,291.25. These jobs were for accountants (3); Field Repre-

(*Continued on page 80*)

Student earnings through the Student Laundry Agencies of the University of Pennsylvania last year exceeded

**$1000**

**QUAKER CITY LAUNDRY**

Dry Cleaning GRAnite 1121 Fur Storage

# UNIVERSITY OF PENNSYLVANIA
# PHILADELPHIA

1740 1941

*The Work of the University is Divided into the Following Undergraduate and Graduate Departments and Other Divisions:*

The College
The College Collateral Courses
The Summer School
The Towne Scientific School
The Moore School of Electrical Engineering
The Wharton School of Finance and Commerce
The Post Graduate Division of the Wharton School
The Institute of Local and State Government
The School of Education
The Division of Nursing Education
The Illman-Carter Unit
The Division of Vocational Teacher Education
The Division of Cultural Olympics
The Division of Schoolmen's Week
The School of Fine Arts
The Department of Music
The Department of Landscape Architecture
The College of Liberal Arts for Women
The Graduate School
The School of Medicine
The Law School
The School of Dentistry
The Courses in Oral Hygiene
The School of Veterinary Medicine
The Graduate School of Medicine
The Evening School of Accounts and Finance
The Extension Schools
The Department of Physical Education
The Division of Physical Instruction
The Division of Student Health
The Division of Intercollegiate Athletics
The Division of Physical Education for Women
The Division of Student Affairs
The Reserve Officers Training Corps of Army and Navy
The Psychological Clinic

*Information on the above University Departments and Divisions may be secured from the Secretary's Office, University of Pennsylvania, 3446 Walnut Street, Philadelphia, Pa.*

# LETTERS

To the Editor:

The addition of illustrations and photographs seems to me to have added attraction to SCHOOL AND COLLEGE PLACEMENT. I find many items of interest and other members of the administration more directly concerned with placement have spoken to me favorably of the publication.

*George A. Brakeley,*
*Financial Vice-President,*
*Princeton University,*
*Princeton, N. J.*

To the Editor:

The December issue of SCHOOL AND COLLEGE PLACEMENT is before me and you certainly are to be commended for the change you have made. The previous issue . . . is satisfactory, but I think the insertion of illustrations together with the pictures of the authors of the articles adds considerably to the interest as well as the appearance. The material is varied and comprehensive with the resulting general impression of a most favorable sort.

*Paul H. Musser,*
*Administrative Vice-President,*
*University of Pennsylvania,*
*Philadelphia, Pa.*

To the Editor:

SCHOOL AND COLLEGE PLACEMENT shows advance in a promising degree. The inclusion of illustrations makes the pages more attractive. . . . Allen gives a glimpse of preliminary organization that has news interest. Hammond's brief statement is informative and to the point. Potter describes a setup which should have wide interest. . . . Rupkey's article on the "Loop Course" is excellent and, in my judgment, illustrates the sort of articles that will be most helpful. Senior Placement Procedures constitute an interesting section . . . .

*C. C. Williams, President,*
*Lehigh University,*
*Bethlehem, Penna.*

To the Editor:

I enjoyed the December issue of SCHOOL AND COLLEGE PLACEMENT and think you are doing an excellent piece of work. I like the inclusion of illustrations and photographs very much.

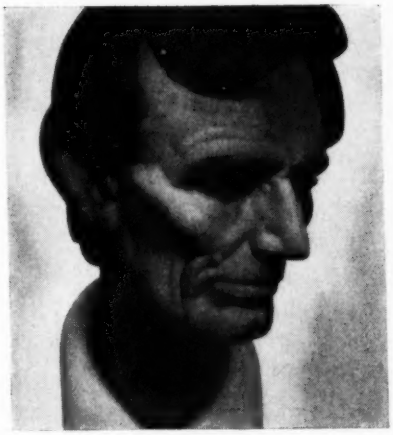
*P. W. Boynton,*
*Supervisor of Employment,*
*Socony-Vacuum Oil Company,*
*New York City*

## A SALES CAREER WITH PROCTER AND GAMBLE

*(Continued from page 8)*

and is the job level aimed at in selecting young, college-trained men of promise. From the job of district manager, promotion is to the level of division manager, of whom the Company has five, all reporting to the general sales manager of the Company.

What do the successful men in the sales organization have? Among other things, they have an abundance of energy, both mental and physical; enthusiasm amounting virtually to a love for their work; open-mindedness, which results in their welcoming suggestions from any source—even from the newest men. All the sales managers, including the division managers in the executive office, have the ability to demonstrate to their men how to sell, and do so frequently. They possess also a consciousness of the importance of thorough training and development of men at all levels, which results in a healthy, steady expansion of the organization.



# A Career In Life Insurance

IN THE selection of tomorrow's Life Insurance field men, there are two current trends: First, to hire fewer and better men. Second, to provide more and more intelligent help for those hired. For the college man with a sales career in mind, this situation is ideal.

The Lincoln National Life will send, without obligation, further information on Life Underwriting as a life work.

★

## THE LINCOLN NATIONAL LIFE INSURANCE COMPANY

***More than a Billion Dollars of Insurance in Force***

FORT WAYNE INDIANA

**OCCUPATIONAL TRENDS IN THE UNITED STATES,** *H. Dewey Anderson and Percy E. Davidson, Stanford University Press,* 1940, 618 *pp.—vii.,* $6.50.

Accurate facts on occupational opportunities represent a fundamental need in a program of occupational adjustment. Information is required, not only concerning jobs immediately available, but also on long-term and short-term shifts in production, processing, manufacturing and services which determine the supply of and the demand for labor.

Such anticipation of future needs is of special importance in planning the educational program, particularly where this is designed to prepare the student for a vocational career. So, for example, unless occupational trends are considered, secondary schools may flood the labor market with bookkeepers at a time when technological changes in this occupation are reducing the demand for such workers. At the university level, the failure to consider and anticipate occupational changes in supply and demand may result in an "over-production" of lawyers and architects and a parallel "under production" of mechanical and chemical engineers. At all levels the study of occupational trends, showing the shifts in occupational emphasis and in the use which society makes of its workers, is necessary for the scientific formulation of social policy and training programs for the effective utilization of the nation's man-power.

The volume *Occupational Trends in the United States* "is offered to educators, vocational guidance specialists, personnel managers, and social scientists as basic information concerning the composition and changing conditions of the American working population." Based on a comprehensive analysis of data on gainfully employed workers* covering a period of over 70 years, "it portrays trends and permits inferences which," according to the authors, "are believed to have value to anyone engaged in the training and placement of workers or in the analysis of changing conditions in the occupational life of the nation." (p. v)

In studying occupational trends the authors have depended upon a searching review of Federal census data from 1870 to the present time.** Occupations were classified under the 10 headings used in the 1930 census, making available, in comparable terms, the number of persons "gainfully employed in the occupations during each of the decades covered by the study.*** It was then possible to calculate the increase or decrease in number of workers during a given decade in comparison with other decades. These data were then corrected with respect to population increases in order to determine whether an observed increase or decrease in number of workers in an occupational group represented merely an outgrowth of changes in population or an actual expansion or decline in employed workers.

In reaching their conclusions the authors depended not alone on statistical data but took into account factors which help to determine the number employed in various occupations. The census trends of occupations are construed with the help of information derived from industrial history and current economic reports. The liquor and beverage industry, for example, furnishes an illustration of the fact that *public policy* and

*Gainfully employed includes all workers ordinarily employed in an occupation, even though they are unemployed at the time of the census.

**Since census figures for 1940 have not yet been published, the authors have depended upon "statistical projections," based upon available material, in treating occupational trends during the past decade. It is proposed to publish a supplement to the present text based on the exact data for 1940 when these figures become available in 1942.

***In many instances it was necessary to reclassify the data for earlier years in order to make comparisons possible.

*technology* both create occupations and destroy them. While there is noted a gain in the number of workers employed in the liquor and beverage industry, following the repeal of the Prohibition Amendment, this increase is not interpreted as evidence of a consistent trend toward increased employment in this industry. Actually, "the number of workers listed as operatives in liquor and beverage establishments increased from 14,578 in 1870 to a maximum of 34,625 in 1900, and was cut in half by the enactment of Prohibition. The loss in number of such workers from 1900 to the date of Prohibition came in the face of a greatly expanded production of liquor and other beverages, and was the result of increased productivity per worker due to invention and installation of labor-saving machinery, the widespread use of electric power, etc. These technological gains were renewed and still others made when Repeal brought the dormant liquor industry to life again. Even though Repeal has augmented their number somewhat, liquor and beverage manufacture gives employment directly to only a small group, which, according to the authors, can exert no appreciable influence upon the course of development of the national labor force," (p. 333) in spite of the great importance attached to increased opportunities for employment in the campaign for the repeal of the Prohibition Amendment.

Factors affecting labor demands vary from occupation to occupation. So, for example, trends in number of physicians must be interpreted with respect to "incidence of disease requiring medical attention, the cost and adequacy of medical care, the fee schedules and net incomes of physicians, the capacity of various levels of the total population to pay for privately administered medical service, the development of group methods of practice and payment, indications of changes in public policy respecting the number of medical trainees and the social control of health and disease," as well as in terms of population changes. "Only after these diverse and sometimes conflicting elements have been considered, can any safe conclusions be drawn concerning the adequacy of the labor force engaged in the healing arts or can any prediction be hazarded about the future in such occupations." (p. 9)

While, according to the authors, it is impossible to enumerate all the agencies which determine the course of occupational trends, eleven factors have proved to be particularly helpful in construing the statistical data. These are: *public policy, technology, occupational barriers, "Acts of God," depletion, labor disputes, alterations in working conditions, the business cycle, age and sex composition of the labor force, access to capital, and changes in tastes and styles.*

In addition to the factors listed above, the authors have taken some account of the present boom in certain occupations centering around the National Defense Program. They recognize that, at the moment, expansion is occurring in occupations which showed a general decline during the period considered in the text, and that prediction for the coming years becomes extremely difficult without exact knowledge as to how long the emergency will last. Reference is also made to the need for starting now to make some provision for the absorption of people who are now being trained to do emergency types of work, although the difficulties of foreseeing immediate developments are recognized.

The wealth of material presented in the book, and the detail of analysis and comment are such as to make it virtually impossible to condense into a brief review even the major findings of the study. Following, however, are a few statements which illustrate the nature of the findings and the character of conclusions concerning occu-

pational trends in various industries, presented by the authors.

*Agriculture*, which engaged the attention of approximately one half of the gainful workers in 1870 has declined steadily, requiring slightly more than a fifth of all workers in 1930. The decennial percentage increase in Agriculture had the maximum in 1880 and has followed an uneven trend of decline ever since, diminishing sharply in the last three decades.

In the *Manufacturing* and *Mechanical* industries, employing 27.9 per cent of all gainful workers, there is a general declining trend in employment in spite of marked increases in production.

*Transportation and Communication* had its largest percentage increase in 1890; experienced another revival in its demand for workers in 1910, dropped to its lowest decennial gain in 1920, expanded somewhat in 1930, and declined to its 1920 level in 1940.

Throughout the period under review *Trade*, employing 12.9 per cent of all gainful workers, continued to make demands for an ever increasing labor force, but in the last three decades an appreciable slackening in the rate of growth has occurred in even this significant part of our economy.

*Public service* is a recently expanding category which reached a great decennial peak in 1910. Although several census reclassifications account in considerable part for this increase, a movement recorded in 1910 placed the Public Service group on a new and higher level which it maintained until 1940.

*Professional Service* reached its peak increase in the three decades ending at 1890, and while the decennial increase has been above the rate of increase of the total of all workers since, it has not been so pronounced, except that in 1930 these workers experienced one of the largest percentage gains made by any group.

*Domestic and Personal Service* has followed an erratic course, showing high decennial gains in 1890 and 1930, the latter coming after an actual loss in workers in the previously recorded census decade and dropping to 3 per cent in 1940.

The *Clerical* group reached a peak decennial gain in 1920, which came at the end of an erratic development from a previously recorded peak in 1880, dropped again in 1930, and increased greatly in 1940.

In general, the authors conclude that the two occupational groups which show the most phenomenal increases are *Public Service* and *Clerical*. However, since their combined numerical proportion of all workers is not great (10.2 per cent in 1930), "they offer little possibility of taking up the slack in rate of growth caused by decline in Agriculture and Manufacturing or providing for a continued large expansion in the total labor force. Also, public service and clerical pursuits are primarily derivative occupations, largely dependent on basic industries which they serve. They often add little to production and processing and rather than make desirable additions to the total economic output they may become a burden on the economy." (pages 20-22)

The details concerning specific occupations presented in the discussion of particular industries is well illustrated in the discussion of *Professional Services*, representing 5.9 per cent of all gainful workers. Typical trends in specific occupations are as follows:

*Teachers, College Presidents, and Professors:*—the number of teachers will probably expand in the near future, although the market is somewhat flooded. With rapid development of public colleges, the number of professors and administrative officers are seen as increasing.

*Music and Music Teachers:*—with radio and entertainment out of home, the number of music teachers declined. With

growing interest in good music, there will probably develop a great need of musicians.

*Lawyers, Judges and Justices* represent an already overcrowded field which is still attracting a surplus of workers.

*Dentists* represent an expanding field with an enlightened public policy on individual well-being.

While the emphasis in this discussion has been upon the discussion of demand and supply of workers, the text is considerably broader in scope since in addition to presenting data on the adequacy of the labor force in relation to the recent and current need for workers, attention is given to the effect of trends upon wages and salaries; the role of technology is examined and its effects on occupations are approximated, and other decisive or contributory factors affecting occupational trends are discussed in detail.

It is apparent that considerable information is to be found in this volume. In spite of this it would be a mistake for a vocational counselor or director of a placement office to expect to find in this volume an answer to his immediate problems in the matter of predicting labor needs in his community. There are many reasons for this. In the first place, the authors surround their statements, and more particularly their predictions, with so many reservations as virtually to vitiate the usefulness of their predictions in the day-to-day operation of a guidance center or employment placement office. While recognizing that the caution exercised by the authors is well advised, the fact still remains that such reservations affect the usefulness of the book as a tool in placement or in formulating an educational program. More important still is the fact that the book deals with a national rather than a local situation. For really serious work in placement this study of national trends must be supplemented by a more detailed and specific study of vocational trends in relation to local occupations and industries. From the viewpoint of the practicing placement officer, counselor, employment officer and school administrator, the book is of value chiefly as a source of reference and to indicate methods that may be employed in the analysis of the local situation with respect to labor supply and demand.—Morris S. Viteles, *Professor of Psychology, University of Pennsylvania.*

**HOW TO FIND AND FOLLOW YOUR CAREER,** *William J. Reilly, Harper and Brothers, New York,* 1936, 157 *pp.*, $1.00.

Dr. Reilly, at one time associated with the Carnegie Institute of Technology, is now Director of the National Institute for Straight Thinking. One wonders that a man with an engineering background should give such an unscientific and limited presentation of a developed field like *vocational guidance.* There are two main themes around which the book is written—first, determine what your real interests are; second, be "reasonably sure that the field which interests you most is the one for which you are best suited."

The author further elaborates the ideas that if you really want something enough, you can not say "I haven't time," "I haven't the money right now," or "my folks don't want me to."

This little book may make a genuine contribution to the thinking of some young people, in getting them to examine their work preferences without the influence of prejudices and also in giving them the challenge and inspiration of possibilities within themselves, which have often not been considered as existent.

The audience addressed is essentially the potential professional and semi-professional group. One gets no feeling that Dr. Reilly is concerned with the large industrial and unskilled group and that they too may have interests that could be considered. Also,

there seems to be insufficient consideration given to the situation of limited possibilities for various types of work, and the restrictions which are thereby imposed, despite one's interest and perhaps even aptitude and specific training.

As a Clinical Psychologist, I object chiefly to Dr. Reilly's presentation in a key sentence "until the science of vocational guidance reaches a higher degree of development and general application from childhood on, it remains for each person to work out his own problems as best he can." His naive stress on the Know Thyself thesis may steer his readers away from scientific help which is available. Numerous clinics and centers are equipped to analyze individual abilities and advise on this very important business of matching men to jobs.—Dorothy Kern Hallowell, *Junior Employment Service, Philadelphia.*

**WORKING WITH WORDS,** *Lorine Pruette, Funk and Wagnalls Company, New York,* 1940, 210 *pp.*, $1.50. (*Kitson Careers Series*)

Subtitles and dust jackets prove their worth with this book in emphasizing its purpose as "a survey of occupations in which the ability to write well is a primary tool." For that is a purpose which might well be lost sight of in an introductory discussion of 103 pages in a book running in its entirety to 210 pages.

Since Dr. Pruette's book is one of the Kitson Careers Series, one is somewhat surprised to find such a discursive treatment and such an amount of material that might be judged irrelevant in a vocational guidance volume. True, the material makes interesting reading, but it seems to be included at the expense of the second half of the book which might well be expanded.

What is discussed in this first or introductory section? First we are introduced to the glories of words with a sizable quotation from Dorothy Thompson, climaxed by: "The word is our tool; the word is our agony; the word is our measure; the word is our life." We are offered a correlation of reading skill with writing ability. We are given a historic discussion carrying us back to the first sounds of the cave man, traveling on through the development of the art of writing to the great inventions in the field of communication. We read of the pony express, we learn of the Reuters news agency, and come at last to the place of radio in a war-torn world.

Then the use of words begins to assume a more personal aspect as we begin to consider words in relationship to jobs. The discussion still remains general, seeking to tempt us, by the mention of great names and achievements in the literature and oratory of education, politics, the law, the ministry medicine, social work, engineering and business, to the belief that ability to use words is a practical asset. Dr. Kilduff makes this point more succinctly when he writes in the preface: "I have no hesitation whatsoever in saying that he who can write well—he who has an aptitude for writing and who has developed his skill—will not lack for opportunities. I say this advisedly, for there are few who have taken the pains to learn how to write well and there are so many positions seeking those who can."

After this, we wander with the English language from its ancestral Indo-European home down through the ages to the present schism between American slang and English slang. Into the next chapter creep psychology and behaviorism to launch us into a discussion of the "pulling power" and the meaning of words.

And finally, we are asked, "Can you read?" and "Can you write?" Certainly no teacher in the American school system today would quarrel with the amount of space assigned to proving that spelling and grammar have fallen to a low estate with the

school children of America. Any teacher can draw up as long a list of misspellings, can produce as many examples of grammatical errors and illiteracy in written expression. No, too much emphasis cannot be given to this sad state of affairs, and the Harvard "Committee on the Use of English by Students" is not the only one to show alarm.

So we come at last to the second part of the book, and our vocational interests begin to find a more definite satisfaction. First of the word vocations discussed is journalism, and the pattern of the following sections is set in attention to the satisfactions of the work compared with the hardships, qualifications and preparation demanded, and the opportunities for beginners and for mature people, with special reference to opportunities for women in the field. The following sections are given over, in the same general outline, to editorial work, advertising and publicity, business, screen and radio, and creative writing.

Now what are the facts that are offered? In journalism, 6000 young people a year are preparing for this field in American colleges. The records of the Columbia School of Journalism show that 12 out of a class of 71 found jobs on newspapers in the 1932 class; in 1933 a graduating class of 56 placed 8 on papers. What is the best entrance into the newspaper world? The small-town local paper. And Dr. Pruette adds: "Knowing the right people is still the best way to get a job in this competitive world."

A consideration of editorial work brings much the same picture. Says the author: "One editor reports that the minute college is out she seems to spend her entire time dodging the last senior class of every college." There are not enough jobs to go around, and many of the applicants for

CECIL F. SHALLCROSS, President T. MAGILL PATTERSON, Secretary
H. A. CARL, Assistant Secretary

1825—1941

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HUTCHINSON, RIVINUS & CO., Agents

PHILADELPHIA

them "seem to have nothing to sell beyond a vague aspiration." Entrance into the field may be made through advancement from a stenographic position, through a knowledge of proofreading or printing or some other small concrete skill, or through some specialty such as home economics. Dr. Pruette even suggests, somewhat unscientifically, "Women sometimes come to fill unusual editing jobs because of working with a husband who is editor, through whom they learn the business." Take warning all unmarried male editors!

The general theme of the chapter on "Words in Business" is simply this, and the quotation comes from May Walker writing in 'The Business Education World': "Words are so important that they can make or break one in the business world, for words, written and oral, carry on the business of the world." The theme is applied to selling, letter writing, stenography, and the business report.

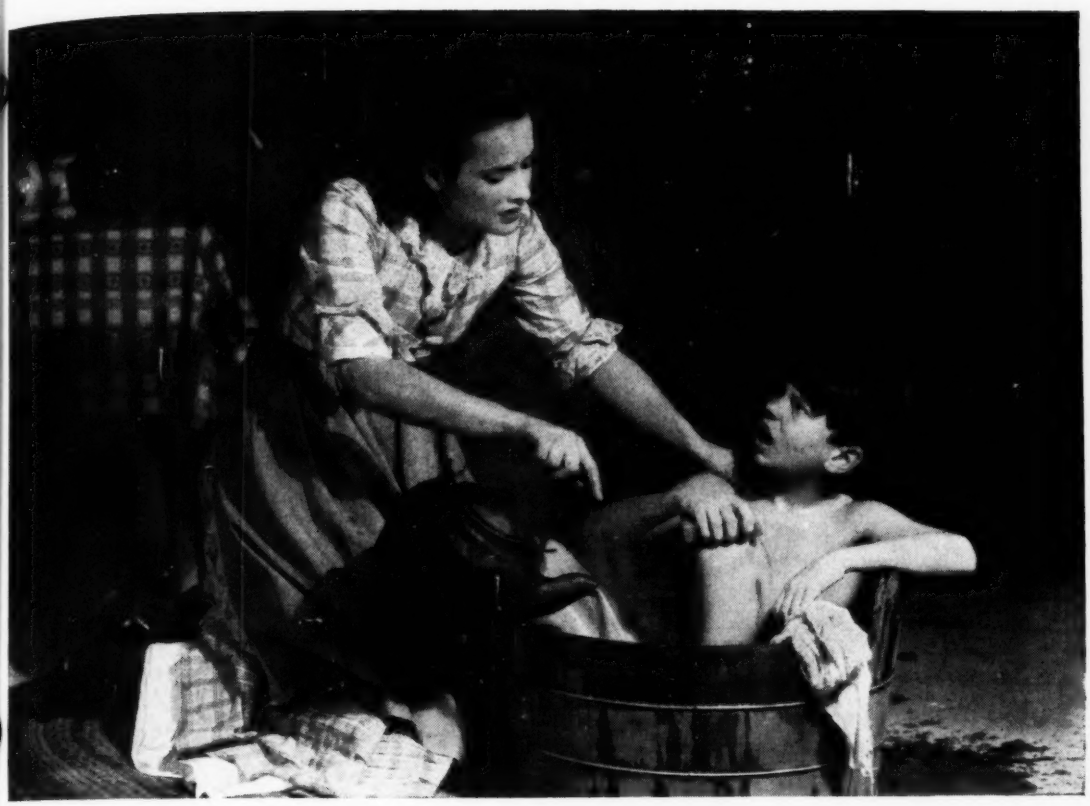
In the chapter entitled "Writing for Screen and Radio," we are introduced to optimism through an account of the successes of Edgar Rice Burroughs with his Tarzan pictures and of the Lone Ranger on the air. Advice is offered on methods of preparing material, ways of selling script or services, present opportunities and future trends. Frances Marion, script-writer, is quoted to the effect that "agents dealing with the studios are welcoming stories by talented free-lance writers." And prices of $250 to $25,000 for screen stories of 30 to 150 pages are flashed before our dazzled eyes. The beginner is further encouraged to learn that M-G-M has instituted a training course for screen writers, recruiting its students from college graduating classes. The discussion of radio opportunities brings information about the free-lance market, staff writing, letter writing (in the answering of audience mail), and the work of press writers of the air.

The last chapter is on "Creative Writing"—agreeable shop talk, but rather too general from a vocational point of view. Not even the embryo writer needs to be told in such detail of the distractions that can lure a writer from his desk. No budding writer needs to be told, through 3 pages, that writers are men and women in love—with their characters or with their words. Advice to the future creative writer may be summed up by saying: "The way to learn to write is to write, and it is also to read, and read again." But there are also a great many hard facts to be learned by a writer before his product is marketed, and in this chapter these facts are sacrificed to generalizations. —Mary L. Milner, *University of Pennsylvania, Philadelphia.*

**WAGE DIFFERENTIALS,** *Carrie Glasser, Columbia University Press, New York,* 1940, 169 *pp.*, $2.00. (*Studies in History, Economics and Public Law, No.* 476)

This book is a study of the persistence of differentials in wages among workers of similar skill in various industries and geographical sections of the United States. Differences in both rates of pay and annual earnings are considered. An attempt is made to set out systematically factors which probably account for the differences found.

*Contents:* The Problem of Wage Differentials. Statistical Evidence on Wage Differentials. Persistence of Differentials in Wage Rates, Hourly Earnings and Weekly Earnings. Differentials in Annual Earnings. Dispersion of Wages. Geographical Wage Differentials. Analysis of Wage Differentials. General Factors Bearing on Wage Differentials. The Causes of Imperfect Labor Mobility. Regional Differences in Market Conditions. Selected Bibliography.



# "Hurry Up Now! Pa's Waiting!"

THE kitchen stove used to feel pretty good on a winter's Saturday night when the thermometer was down around zero. So did the heated flatiron in the foot of the bed. But how many of us would trade the comfort and privacy of our modern, heated bathrooms for the cramped discomfort of the wooden tub and the sting of the home-made soap? And who wants to lug out the water afterward and mop up the kitchen floor?

There are a lot more of today's home conveniences that we wouldn't trade for their counterparts of the "good old days." The electric washer, for instance, for the scrubbing board; the electric light for the messy coal-oil lamp; the furnace for the parlor base-burner.

Most of us are incomparably richer than the people of a generation ago—not so much in money, perhaps, but in the things our money will buy. And in most cases these are the products of American industry—manufactured articles that have been developed by industry, improved, made less and less expensive so that more millions of people can afford to own them.

In almost every manufacturing improvement that has made this progress possible, electricity has played a vital part. And the scientists, engineers, and workmen of General Electric, who have done so much to make electricity more useful, are still seeking ways for electricity to help in the creation of still More Goods for More People at Less Cost.

*G-E research and engineering have saved the public from ten to one hundred dollars for every dollar they have earned for General Electric*

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## CONTRIBUTOR'S PAGE

**Dr. Johnson O'Connor** was born in Chicago, took his A.B. at Harvard University in 1913 and his A.M. in 1914. From 1911 until 1918 he worked on astronomical mathematical research with Percival Lowell, then transferred his studies to problems of metallurgical research. From 1918 to 1920 he was engaged in this work for the American Steel and Wire Company. He then joined the General Electric Company, and engaged in personnel work at the Lynn, Massachusetts plant. From his work here he derived a series of aptitude tests which enabled him to organize the Human Engineering Laboratory at Stevens Institute of Technology. He has been working with detection of aptitudes for eighteen years. The Human Engineering Laboratory has affiliated laboratories in Boston, in connection with Massachusetts Institute of Technology, and in Chicago, in connection with Armour Institute. *Redirecting Americans*, on page 9, is Dr. O'Connor's account of the work of the Laboratory.

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**Professor Edward G. Cornelius,** whose account of *Vocational Self-Guidance* at Bucknell University appears on page 21, was graduated from Maryville College in 1925, with the B.A. in Economics; from Vanderbilt University in 1926, with his M.A. in the same subject; and received his Ph.D. from Vanderbilt in 1936, with work in the same field. In addition, he has pursued graduate work at the Universities of North Carolina, Kentucky, Chicago and California, and at George Peabody College for Teachers. His teaching experience includes two years as Supervising Principal in Franklin County, N. C.; five years as professor of business administration, Southwestern College; three years as chairman of the secretarial division, Georgia State College for Women; and four years as assistant Professor of Economics and Commerce at Bucknell University.

**Mr. John R. Beery** is Associate Director of the Occupational Adjustment Study of the National Association of Secondary-School Principals. He is also author of the article on *The Placement Problem of Secondary School Youth*, which appears on page 24 of this issue.

Mr. Beery is a graduate of Juniata College (A.B., 1930); University of Chicago (A.M. in Mathematics, 1934); and is at present a candidate for the Ph.D. at Teachers College, Columbia University. He has taught mathematics at the Martinsburgh (Pa.) High School, Merchantville (N.J.) High School, and the Princeton (N. J.) High School. He has been with the Occupational Adjustment Study since 1939.

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**Mr. Wesley E. Scott** and **Mr. Donald A. Hilsee** (*Selling Your Services*, page 29) are both graduates of the University of Pennsylvania's Wharton School of Finance and Commerce. Mr. Scott, who received his B.S. in 1919, is now Head of the Department of Commerce, South Philadelphia High School, and Mr. Hilsee, who was granted the B.S. in Economics in 1920, is Instructor in Retail Selling.

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*Vocational Guidance in the Swarthmore High School* (page 30) is the contribution of **Harry E. Oppenlander.** He served as Treasurer and Teacher of Science at the Chestnut Hill Academy from 1925, when he received his A.B. from Swarthmore College, until 1935, at which time he was appointed Harrison Fellow in Education at the University of Pennsylvania. In 1938 he joined the Science Department of Swarthmore High School, and since that time has served jointly as Head of the Department, and as Chairman of the Faculty Committee on Guidance.

*Training for Continuing Leadership* (page 34) detailing the student Business and Engineering Courses of the General Electric Company, was prepared by **W. V. Merrihue,** Assistant to the Manager of the General Electric Publicity Department. Mr. Merrihue is a graduate in Chemical Engineering, of the University of Pennsylvania, Class of 1925.

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Ursinus College, University of Pennsylvania and Temple University all claim **Dr. Charles A. Fisher** (page 43) as an alumnus. He received his Baccalaureate degree, his Master's and his Doctorate, respectively, from these institutions.

Dr. Fisher has taught in the Royersford (Pa.) high school, West Philadelphia High School, Camden (N. J.) High School, and Temple University High School. He was Supervising Principal of the Norwood School District, and has taught at the State Teachers Colleges of Shippensburg (Pa.), and Western Maryland.

Since 1923 Dr. Fisher has been affiliated with the Teachers College of Temple University, where he is Assistant Professor of Education and Director of the Educational Placement Bureau. He has been active in the organization of the Pennsylvania Institutional Teachers Placement Association, and the National Institutional Teachers Placement Association. He is at present Treasurer of the latter, and a member of the Executive Committee. He has contributed a number of articles concerning teacher placement for publication under the auspices of the American Council on Education.

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**Clyde A. McKeeman** (page 52) graduated from the University of Maine in 1923 with a B.S. in Mechanical Engineering. He received his M.S. in the same field from Harvard University in 1931.

Following his graduation from Maine, in 1923, he became associated with the Westinghouse Electric and Manufacturing Company as a Technical Apprentice. He was connected with this company until 1926, serving the last two years as Application Engineer in the Stoker Department. In 1926 he joined the faculty of the Case School of Applied Science as an Instructor. He has been Assistant Professor of Mechanical Engineering since 1931. For seven years, from 1934 to 1941, he was Assistant Director of the Evening Division. He recently became Director of this Division. Professor McKeeman is a member of the American Society of Heating and Ventilating Engineering, and has written articles on *Heat Transfer from Direct and Extended Surfaces with Forced Air Circulation* and *Performance of Fin-Tube Units for Air Cooling and Dehumidifying* for the journal of that organization.

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**Dean Edward Steidle** (page 57) of the School of Mineral Industries at the Pennsylvania State College, is himself a graduate of the College, Class of 1911. He was employed as a miner & mine sampler previous to this, from 1908 to 1910, and following his graduation he worked as a miner and millman from 1911-1912. He was with the U. S. Bureau of Mines from 1912 to 1917, at which time he served as Captain of Company D, and Commanding Officer, First Battalion, 30th Engineers, A. E. F., and was attached to the British Expeditionary Forces. Following the Armistice, in 1919, Dean Steidle became Associate Professor of Mining Engineering at Carnegie Institute of Technology. The next year he was appointed Consulting Engineer for the U. S. Bureau of Mines and Mine Safety Appliances Company, a post he held from 1920 to 1928. He then held the post as Dean of the School of Mines and Metallurgy, at the Pennsylvania State College, for a year. When the School was re-

organized in 1929, he became Dean of the School of Mineral Industries, a position he still occupies.

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**D. C. Jackson, Jr.** (page 59), followed a family tradition in entering the field of Electrical Engineering. His father, D. C. Jackson, Sr., (Massachusetts Institute of Technology) and two uncles, John Price Jackson and William Benjamin Jackson, all graduated from the Pennsylvania State College with degrees in Engineering. His grandfather, Josiah Jackson, was head of the Mathematics Department at that institution, and was influential in the establishment of the Engineering School there.

Dean Jackson was educated at Harvard University and the Massachusetts Institute of Technology. He has served as Instructor in Electrical Engineering at the University of Missouri, 1922-23; Assistant Professor of Electrical Engineering, Duke University, 1923-25; Professor and Head of the Department of Mechanical and Electrical Engineering, Speed Scientific School, University of Louisville, 1925-30; and Professor of Electrical Engineering and head of the Department at the University of Kansas, 1930 to February 1936. He served as Director of the Lewis Institute, Chicago, for a period beginning September, 1935. He is now Dean of the College of Engineering, University of Notre Dame.

During the first World War, Dean Jackson served overseas in France and Belgium as 2nd Lt., Coast Artillery, U. S. Army, from 1917 to 1919. He was Engineer of the Board to estimate war damages in allied countries for the American Peace Commission, 1919.

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## UNIVERSITY OF TEXAS

(*Continued from page 66*)

sentatives (5); Geologist (1); Government Service (2); Interviewer (1); Office Manager (1); Personnel Worker (2); Secretaries (10); and Technicians (5).

That section of the report dealing with the National Youth Administration indicates a steady increase, over a three-year period, in the number of students aided through this channel. Although the number on N. Y. A. payrolls has varied from month to month, the average for each year has risen.

1937-38—663—$13.95 per month average.
1938-39—746— 13.93 per month average.
1939-40—951— 13.95 per month average.

# THEY GREW UP WITH THE POST

If you should ask the question in any representative audience in America today, "*How many of you men were Post sales boys?*" hands would shoot up all over the floor.

If you should ask any representative group of high school graduates, "*How many of you sold The Post during your undergraduate years?*" the response would be almost as great.

If you should ask college men now studying commerce, business, advertising, "*How many of you use The Post as a textbook?*" you again would receive a wide response.

Today, as yesterday, **The Saturday Evening Post** is a must to some over 3,000,000 people who rely on The Post to keep them posted on world-wide, nation-wide, business conditions and political events.

Today, the youth of America are receiving more recognition than ever before. Incredible as it may sound, several million 'teen-age youngsters received, and are receiving, their first practical business training through the Curtis Vocational Plan as employed in some 5000 high schools throughout the land.

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